

# CHEMTABLE

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Wed Jan 7 14:45:15 2015



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# Chapter 1

## Class Index

### 1.1 Class Hierarchy

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## Chapter 3

# Class Documentation

### 3.1 convolute::\_object Class Reference

The documentation for this class was generated from the following file:

- `src/convolute.py`

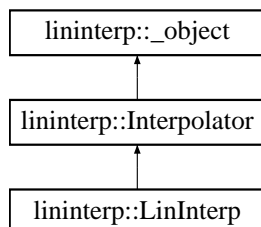
## 3.2 `fittogrid::_object` Class Reference

The documentation for this class was generated from the following file:

- `src/fittogrid.py`

### 3.3 lininterp::\_object Class Reference

Inheritance diagram for lininterp::\_object::

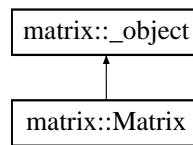


The documentation for this class was generated from the following file:

- `src/lininterp.py`

### 3.4 `matrix::_object` Class Reference

Inheritance diagram for `matrix::_object`:

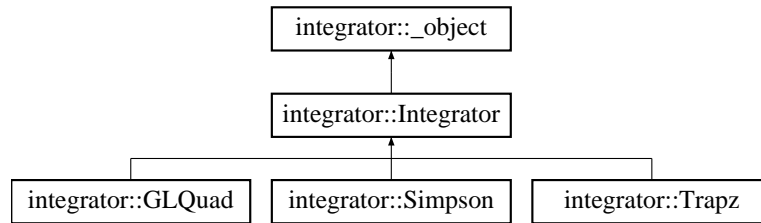


The documentation for this class was generated from the following file:

- `src/matrix.py`

## 3.5 integrator::\_object Class Reference

Inheritance diagram for integrator::\_object::

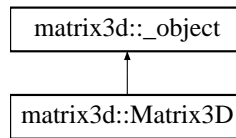


The documentation for this class was generated from the following file:

- `src/integrator.py`

## 3.6 matrix3d::\_object Class Reference

Inheritance diagram for matrix3d::\_object::



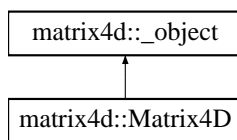
The documentation for this class was generated from the following file:

- src/matrix3d.py



## 3.7 matrix4d::\_object Class Reference

Inheritance diagram for matrix4d::\_object::

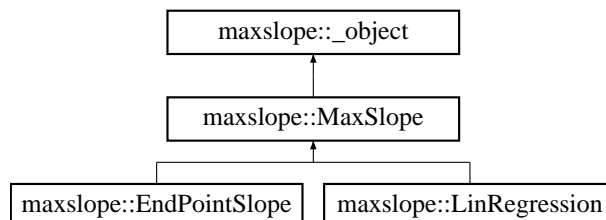


The documentation for this class was generated from the following file:

- src/matrix4d.py

### 3.8 maxslope::\_object Class Reference

Inheritance diagram for maxslope::\_object::

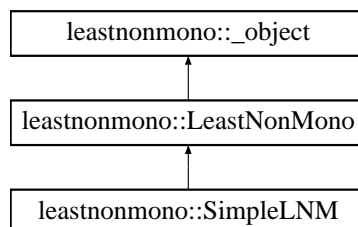


The documentation for this class was generated from the following file:

- `src/maxslope.py`

## 3.9 leastnonmono::\_object Class Reference

Inheritance diagram for leastnonmono::\_object::

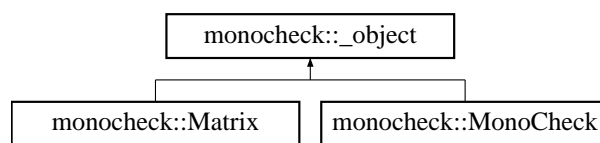


The documentation for this class was generated from the following file:

- `src/leastnonmono.py`

### 3.10 `monocheck::_object` Class Reference

Inheritance diagram for `monocheck::_object`:

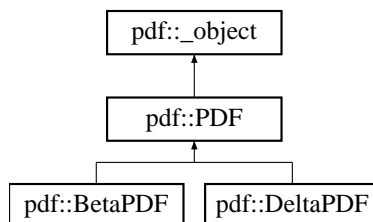


The documentation for this class was generated from the following file:

- `src/monocheck.py`

## 3.11 pdf::\_object Class Reference

Inheritance diagram for pdf::\_object::

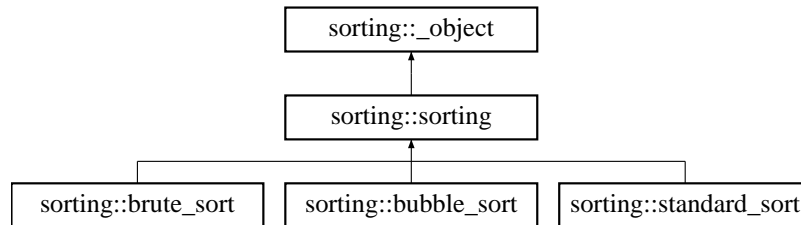


The documentation for this class was generated from the following file:

- src/pdf.py

## 3.12 `sorting::_object` Class Reference

Inheritance diagram for `sorting::_object`:

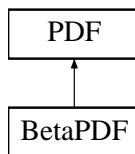


The documentation for this class was generated from the following file:

- `src/sorting.py`

## 3.13 BetaPDF Class Reference

Inheritance diagram for BetaPDF::



### Public Member Functions

- **BetaPDF** (const double \*Zmean, const int ZmeanPoints, const double \*Zvar, const int ZvarPoints)
- int pdfVal (const double \*Z, const int ZPoints, [Matrix3D](#) \*pdfValM)

### 3.13.1 Member Function Documentation

#### 3.13.1.1 int BetaPDF::pdfVal (const double \* Z, const int ZPoints, [Matrix3D](#) \* pdfValM) [virtual]

check for Min or Max mean

Delta [PDF](#) for zero variance

Impossible cases: becomes double delta [PDF](#)

[BetaPDF](#)

Middle points:  $0 < n < ZPoints-1$

Set [PDF](#) to output

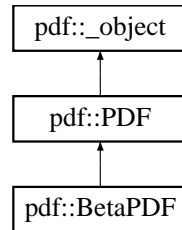
Implements [PDF](#).

The documentation for this class was generated from the following files:

- src/betaPDF.h
- src/betaPDF.cc

### 3.14 pdf::BetaPDF Class Reference

Inheritance diagram for pdf::BetaPDF::



#### Public Member Functions

- def `__init__`
- def `pdfVal`

#### Public Attributes

- `this`

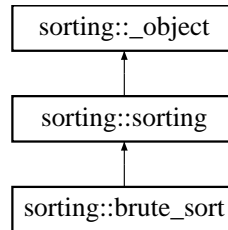
The documentation for this class was generated from the following file:

- `src/pdf.py`



## 3.15 sorting::brute\_sort Class Reference

Inheritance diagram for sorting::brute\_sort::



### Public Member Functions

- def `__init__`
- def `sort_data`
- def `SetRefColNum`
- def `extractRefCol`
- def `generateIndexArray`
- def `SetSortStartIndex`
- def `SetSortEndIndex`

### Public Attributes

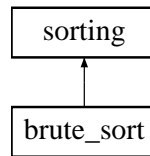
- `this`

The documentation for this class was generated from the following file:

- `src/sorting.py`

### 3.16 brute\_sort Class Reference

Inheritance diagram for brute\_sort::



#### Public Member Functions

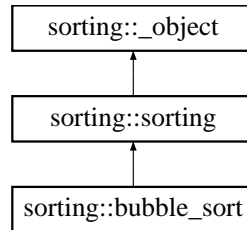
- **brute\_sort** ([Matrix](#) \*data)
- int [sort\\_data](#) ()  
*Main [sorting](#) body.*
- void [SetRefColNum](#) (int num)  
*Set the reference column number.*
- int **extractRefCol** ()
- int **generateIndexArray** ()
- void **SetSortStartIndex** (int left)
- void **SetSortEndIndex** (int right)

The documentation for this class was generated from the following files:

- src/brute\_sort.h
- src/brute\_sort.cc

## 3.17 `sorting::bubble_sort` Class Reference

Inheritance diagram for `sorting::bubble_sort`:



### Public Member Functions

- `def __init__`
- `def sort_data`
- `def SetRefColNum`

### Public Attributes

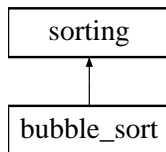
- `this`

The documentation for this class was generated from the following file:

- `src/sorting.py`

## 3.18 bubble\_sort Class Reference

Inheritance diagram for bubble\_sort::



### Public Member Functions

- [bubble\\_sort](#) ([Matrix](#) \*data)
- [~bubble\\_sort](#) ()  
*Destructor.*
- [int sort\\_data](#) ()  
*Main [sorting](#) body.*
- [void SetRefColNum](#) (int num)  
*Set the reference column number and extract the data of the reference column to the container refColumn\_.*

### 3.18.1 Constructor & Destructor Documentation

#### 3.18.1.1 bubble\_sort::bubble\_sort ([Matrix](#) \* *data*)

The constructor duplicates the data from the matrix pointer to `datacopy_` object. It also generates the array containing the indices to be used during [sorting](#).

### 3.18.2 Member Function Documentation

#### 3.18.2.1 [int bubble\\_sort::sort\\_data](#) () [[virtual](#)]

Main [sorting](#) body. Details of the bubble sort algorithm can be found from the following link:  
[http://en.wikipedia.org/wiki/Bubble\\_sort](http://en.wikipedia.org/wiki/Bubble_sort)

Implements [sorting](#).

The documentation for this class was generated from the following files:

- `src/bubble_sort.h`
- `src/bubble_sort.cc`

## 3.19 CompVec Class Reference

Comparator for the standard [sorting](#) algorithm.

### Public Member Functions

- **CompVec** (double \*arr)
- bool **operator()** (size\_t i, size\_t j)

#### 3.19.1 Detailed Description

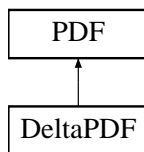
Comparator for the standard [sorting](#) algorithm.

The documentation for this class was generated from the following file:

- src/standard\_sort.cc

## 3.20 DeltaPDF Class Reference

Inheritance diagram for DeltaPDF::



### Public Member Functions

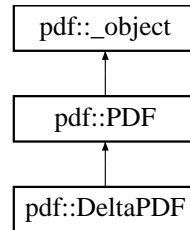
- **DeltaPDF** (const double \*Zmean, const int ZmeanPoints)
- int **pdfVal** (const double \*Z, const int ZPoints, [Matrix3D](#) \*pdfValM)

The documentation for this class was generated from the following files:

- src/deltaPDF.h
- src/deltaPDF.cc

## 3.21 pdf::DeltaPDF Class Reference

Inheritance diagram for pdf::DeltaPDF::



### Public Member Functions

- def `__init__`
- def `pdfVal`

### Public Attributes

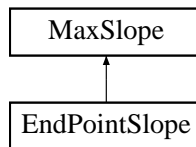
- `this`

The documentation for this class was generated from the following file:

- `src/pdf.py`

## 3.22 EndPointSlope Class Reference

Inheritance diagram for EndPointSlope::



### Public Member Functions

- [EndPointSlope](#) (const [Matrix](#) &progVar)  
*Constructor.*
- [~EndPointSlope](#) ()  
*Destructor.*
- int [MostMonotonic](#) (int \*monoAry, const int ncols, const int col)

### 3.22.1 Member Function Documentation

#### 3.22.1.1 int EndPointSlope::MostMonotonic (int \* *monoAry*, const int *ncols*, const int *col*) [virtual]

MostMonotonic calculates the slope of the best linear approximation for each progress variable which is strictly increasing or strictly decreasing. The output array monoAry must be of length ncols, where each cell holds a value of 3 if C is strictly monotonic and has the largest slope, 2 if C is strictly monotonic but does not have the largest slope, and 0 for non-monotonic C. col is the reference column.

Implements [MaxSlope](#).

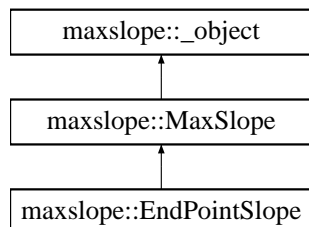
The documentation for this class was generated from the following files:

- src/endpointslope.h
- src/endpointslope.cc



## 3.23 maxslope::EndPointSlope Class Reference

Inheritance diagram for maxslope::EndPointSlope::



### Public Member Functions

- def `__init__`
- def `MostMonotonic`

### Public Attributes

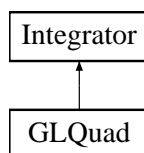
- `this`

The documentation for this class was generated from the following file:

- `src/maxslope.py`

## 3.24 GLQuad Class Reference

Inheritance diagram for GLQuad::



### Public Member Functions

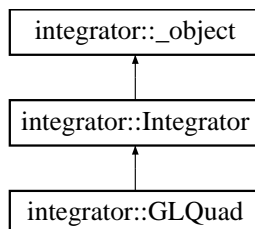
- **GLQuad** (int Nodes)
- double **integrate** (const double \*integrand, const double \*Z, const int ZPoints)

The documentation for this class was generated from the following files:

- src/glquad.h
- src/glquad.cc

## 3.25 integrator::GLQuad Class Reference

Inheritance diagram for integrator::GLQuad::



### Public Member Functions

- def `__init__`
- def `integrate`

### Public Attributes

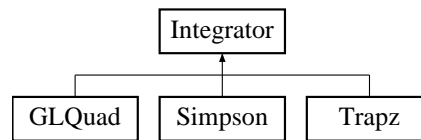
- `this`

The documentation for this class was generated from the following file:

- `src/integrator.py`

## 3.26 Integrator Class Reference

Inheritance diagram for Integrator::



### Public Member Functions

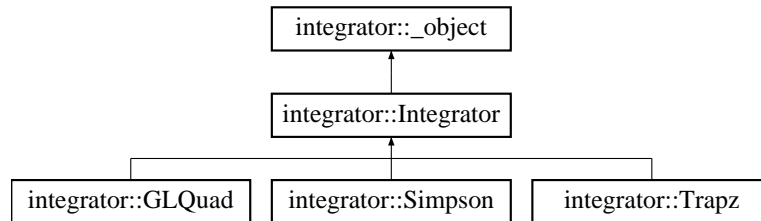
- virtual double **integrate** (const double \*integrand, const double \*Z, const int ZPoints)=0

The documentation for this class was generated from the following file:

- src/integrator.h

## 3.27 integrator::Integrator Class Reference

Inheritance diagram for integrator::Integrator::



### Public Member Functions

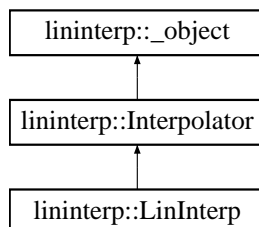
- `def __init__`
- `def integrate`

The documentation for this class was generated from the following file:

- `src/integrator.py`

## 3.28 lininterp::Interpolator Class Reference

Inheritance diagram for lininterp::Interpolator::



### Public Member Functions

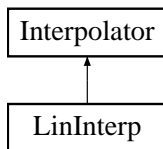
- def **\_\_init\_\_**
- def **Interp**

The documentation for this class was generated from the following file:

- src/lininterp.py

## 3.29 Interpolator Class Reference

Inheritance diagram for Interpolator::



### Public Member Functions

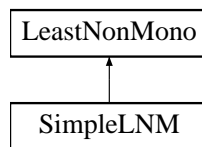
- virtual int **Interp** (const [Matrix](#) \*matin, int col, double ival, double \*vecout, int cols)=0

The documentation for this class was generated from the following file:

- src/interpolator.h

### 3.30 LeastNonMono Class Reference

Inheritance diagram for LeastNonMono::



#### Public Member Functions

- virtual int **LeastNonMonotonic** (int \*monoAry, const int ncols, const int col)=0

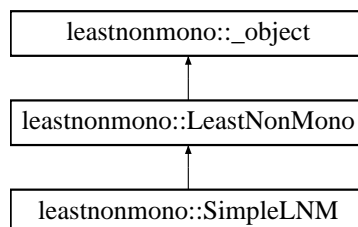
The documentation for this class was generated from the following file:

- src/leastnonmono.h



## 3.31 leastnonmono::LeastNonMono Class Reference

Inheritance diagram for leastnonmono::LeastNonMono::



### Public Member Functions

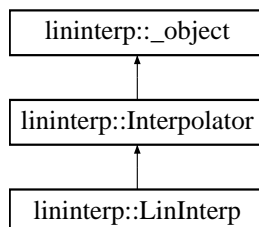
- def `__init__`
- def `LeastNonMonotonic`

The documentation for this class was generated from the following file:

- `src/leastnonmono.py`

### 3.32 lininterp::LinInterp Class Reference

Inheritance diagram for lininterp::LinInterp::



#### Public Member Functions

- def `__init__`
- def `Interp`

#### Public Attributes

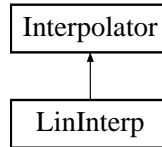
- `this`

The documentation for this class was generated from the following file:

- `src/lininterp.py`

## 3.33 LinInterp Class Reference

Inheritance diagram for LinInterp::



### Public Member Functions

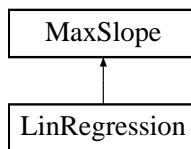
- int **Interp** (const [Matrix](#) \*matin, int col, double ival, double \*vecout, int cols)

The documentation for this class was generated from the following files:

- src/lininterp.h
- src/lininterp.cc

## 3.34 LinRegression Class Reference

Inheritance diagram for LinRegression::



### Public Member Functions

- [LinRegression](#) (const [Matrix](#) &progVar)  
*Constructor.*
- [~LinRegression](#) ()  
*Destructor.*
- int [MostMonotonic](#) (int \*monoAry, const int ncols, const int col)

### 3.34.1 Member Function Documentation

#### 3.34.1.1 int LinRegression::MostMonotonic (int \* *monoAry*, const int *ncols*, const int *col*) [virtual]

MostMonotonic calculates the slope of the best linear approximation for each progress variable which is strictly increasing or strictly decreasing. The output array monoAry must be of length ncols, where each cell holds a value of 3 if C is strictly monotonic and has the largest slope, 2 if C is strictly monotonic but does not have the largest slope, and 0 for non-monotonic C. col is the reference column.

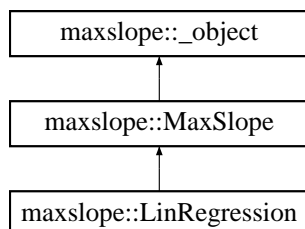
Implements [MaxSlope](#).

The documentation for this class was generated from the following files:

- src/linregression.h
- src/linregression.cc

## 3.35 maxslope::LinRegression Class Reference

Inheritance diagram for maxslope::LinRegression::



### Public Member Functions

- def `__init__`
- def `MostMonotonic`

### Public Attributes

- `this`

The documentation for this class was generated from the following file:

- `src/maxslope.py`

## 3.36 Matrix Class Reference

### Public Member Functions

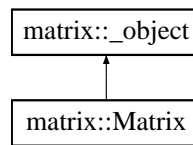
- [Matrix](#) (int rows, int cols)  
*Constructor.*
- [~Matrix](#) ()  
*Destructor.*
- double [GetVal](#) (int i, int j) const  
*Get the value at a specified index.*
- void [SetVal](#) (int i, int j, double val)  
*Set the value at a specific location.*
- int [GetNumRows](#) () const  
*Return the number of rows.*
- int [GetNumCols](#) () const  
*Return the number of columns.*
- int [GetCol](#) (int j, double \*colAry) const  
*Return an array containing column j.*

The documentation for this class was generated from the following files:

- src/matrix.h
- src/matrix.cc

## 3.37 matrix::Matrix Class Reference

Inheritance diagram for matrix::Matrix::



### Public Member Functions

- `def __init__`
- `def GetVal`
- `def SetVal`
- `def GetNumRows`
- `def GetNumCols`
- `def GetCol`

### Public Attributes

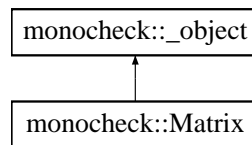
- `this`

The documentation for this class was generated from the following file:

- `src/matrix.py`

### 3.38 `monocheck::Matrix` Class Reference

Inheritance diagram for `monocheck::Matrix`:



#### Public Member Functions

- `def __init__`
- `def GetVal`
- `def SetVal`
- `def GetNumRows`
- `def GetNumCols`
- `def GetCol`

#### Public Attributes

- `this`

The documentation for this class was generated from the following file:

- `src/monocheck.py`



## 3.39 Matrix3D Class Reference

### Public Member Functions

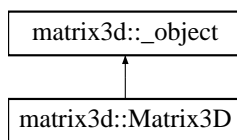
- [Matrix3D](#) (int dim1, int dim2, int dim3)  
*Constructor.*
- [~Matrix3D](#) ()  
*Destructor.*
- double [GetVal](#) (int i, int j, int k) const  
*Get the value at a specified index.*
- void [SetVal](#) (int i, int j, int k, double vol)  
*Set the value at a specified index.*
- int [GetNumDim1](#) () const  
*Return dim1.*
- int [GetNumDim2](#) () const  
*Return dim2.*
- int [GetNumDim3](#) () const  
*Return dim3.*

The documentation for this class was generated from the following files:

- src/matrix3d.h
- src/matrix3d.cc

### 3.40 matrix3d::Matrix3D Class Reference

Inheritance diagram for matrix3d::Matrix3D::



#### Public Member Functions

- def `__init__`
- def `GetVal`
- def `SetVal`
- def `GetNumDim1`
- def `GetNumDim2`
- def `GetNumDim3`

#### Public Attributes

- `this`

The documentation for this class was generated from the following file:

- `src/matrix3d.py`

## 3.41 Matrix4D Class Reference

### Public Member Functions

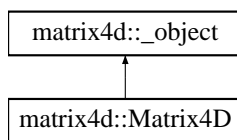
- [Matrix4D](#) (int dim1, int dim2, int dim3, int dim4)  
*Constructor.*
- [~Matrix4D](#) ()  
*Destructor.*
- double [GetVal](#) (int i, int j, int k, int l) const  
*Get the value at a specified index.*
- void [SetVal](#) (int i, int j, int k, int l, double val)  
*Set the value at a specified index.*
- int [GetNumDim1](#) () const  
*Return dim1.*
- int [GetNumDim2](#) () const  
*Return dim2.*
- int [GetNumDim3](#) () const  
*Return dim3.*
- int [GetNumDim4](#) () const  
*Return dim4.*

The documentation for this class was generated from the following files:

- src/matrix4d.h
- src/matrix4d.cc

### 3.42 matrix4d::Matrix4D Class Reference

Inheritance diagram for matrix4d::Matrix4D::



#### Public Member Functions

- `def __init__`
- `def GetVal`
- `def SetVal`
- `def GetNumDim1`
- `def GetNumDim2`
- `def GetNumDim3`
- `def GetNumDim4`

#### Public Attributes

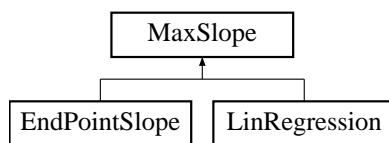
- `this`

The documentation for this class was generated from the following file:

- `src/matrix4d.py`

## 3.43 MaxSlope Class Reference

Inheritance diagram for MaxSlope::



### Public Member Functions

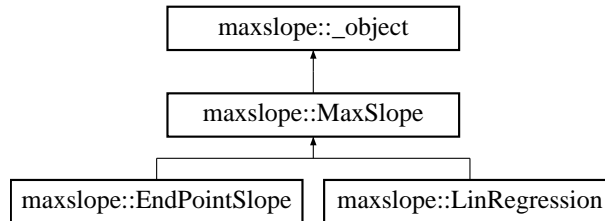
- virtual int **MostMonotonic** (int \*monoAry, const int ncols, const int col)=0

The documentation for this class was generated from the following file:

- src/maxslope.h

### 3.44 maxslope::MaxSlope Class Reference

Inheritance diagram for maxslope::MaxSlope::



#### Public Member Functions

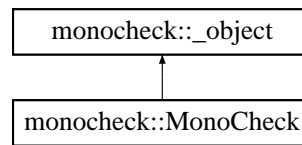
- `def __init__`
- `def MostMonotonic`

The documentation for this class was generated from the following file:

- `src/maxslope.py`

## 3.45 monochek::MonoCheck Class Reference

Inheritance diagram for monochek::MonoCheck::



### Public Member Functions

- def `__init__`
- def `CheckStrictMonotonicity`

### Public Attributes

- `this`

The documentation for this class was generated from the following file:

- `src/monochek.py`

## 3.46 MonoCheck Class Reference

### Public Member Functions

- [MonoCheck](#) (const [Matrix](#) &progVar)  
*Constructor.*
- [~MonoCheck](#) ()  
*Destructor.*
- int [CheckStrictMonotonicity](#) (int \*monoAry, const int ncols, int col)

### 3.46.1 Member Function Documentation

#### 3.46.1.1 int MonoCheck::CheckStrictMonotonicity (int \* *monoAry*, const int *ncols*, int *col*)

CheckStrictMonotonicity checks the monotonicity of each column (AKA progress variable "C") in progVar with respect to column "col". The output array monoAry must be of length ncols\_, where each cell holds a value of 3 if C is strictly increasing or strictly decreasing and 0 otherwise.

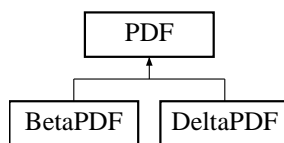
The documentation for this class was generated from the following files:

- src/monocheck.h
- src/monocheck.cc



## 3.47 PDF Class Reference

Inheritance diagram for PDF::



### Public Member Functions

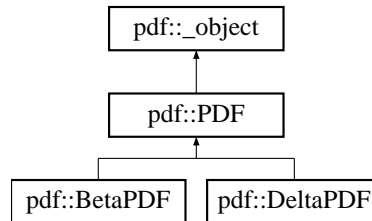
- virtual int **pdfVal** (const double \*Z, const int ZPoints, [Matrix3D](#) \*pdfValM)=0

The documentation for this class was generated from the following file:

- src/pdf.h

### 3.48 pdf::PDF Class Reference

Inheritance diagram for pdf::PDF::



#### Public Member Functions

- def `__init__`
- def `pdfVal`

The documentation for this class was generated from the following file:

- `src/pdf.py`

## 3.49 iofuncs::ProcFile Class Reference

### Public Member Functions

- def `__init__`
- def `gettitles`
- def `interpolate`

#### 3.49.1 Detailed Description

returns interpolated data (in `datavec`) from the given file for the species given in `inputvars`. Also returns all column headers from the datafile in `titles`

The documentation for this class was generated from the following file:

- `python/iofuncs.py`

## 3.50 SequenceGen Class Reference

Sequence generator for the standard [sorting](#) algorithm.

### Public Member Functions

- **SequenceGen** (int start=0)
- int **operator()** ()

### 3.50.1 Detailed Description

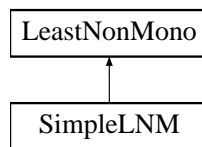
Sequence generator for the standard [sorting](#) algorithm.

The documentation for this class was generated from the following file:

- src/standard\_sort.cc

## 3.51 SimpleLNM Class Reference

Inheritance diagram for SimpleLNM::



### Public Member Functions

- [SimpleLNM](#) (const [Matrix](#) &progVar)  
*Constructor.*
- [~SimpleLNM](#) ()  
*Destructor.*
- int [LeastNonMonotonic](#) (int \*monoAry, const int ncols, const int col)

### 3.51.1 Member Function Documentation

#### 3.51.1.1 int SimpleLNM::LeastNonMonotonic (int \* *monoAry*, const int *ncols*, const int *col*) [virtual]

LeastNonMonotonic calculates how much each progress variable is strictly increasing and strictly decreasing. The input array monoAry will initially be filled with 0s since all progress variables are non-monotonic. This method will select the least non-monotonic and change its value in monoAry to 1. col is the reference column.

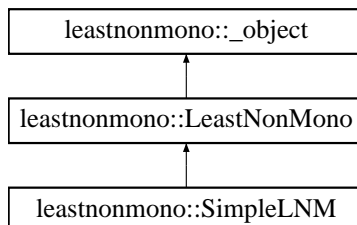
Implements [LeastNonMono](#).

The documentation for this class was generated from the following files:

- src/simplelnm.h
- src/simplelnm.cc

## 3.52 leastnonmono::SimpleLNM Class Reference

Inheritance diagram for leastnonmono::SimpleLNM::



### Public Member Functions

- def `__init__`
- def `LeastNonMonotonic`

### Public Attributes

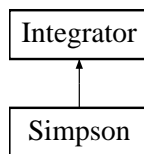
- `this`

The documentation for this class was generated from the following file:

- `src/leastnonmono.py`

## 3.53 Simpson Class Reference

Inheritance diagram for Simpson::



### Public Member Functions

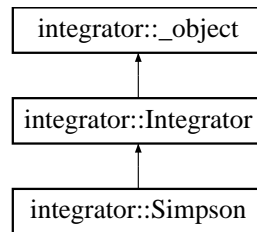
- double **integrate** (const double \*integrand, const double \*Z, const int ZPoints)

The documentation for this class was generated from the following files:

- src/simpson.h
- src/simpson.cc

### 3.54 integrator::Simpson Class Reference

Inheritance diagram for integrator::Simpson::



#### Public Member Functions

- def `__init__`
- def `integrate`

#### Public Attributes

- `this`

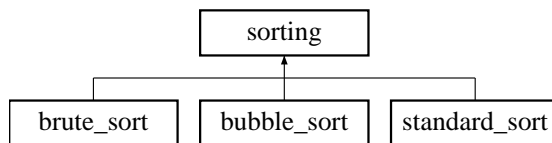
The documentation for this class was generated from the following file:

- `src/integrator.py`



## 3.55 sorting Class Reference

Inheritance diagram for sorting::



### Classes

- class `_object`
- class `brute_sort`
- class `bubble_sort`
- class `sorting`
- class `standard_sort`

### Public Member Functions

- virtual int `sort_data` ()=0  
*Virtual function to be inherited by each `sorting` algorithm to sort the give data.*
- virtual void `SetRefColNum` (int num)  
*Setting the reference column according to which the data will be sorted.*

### Public Attributes

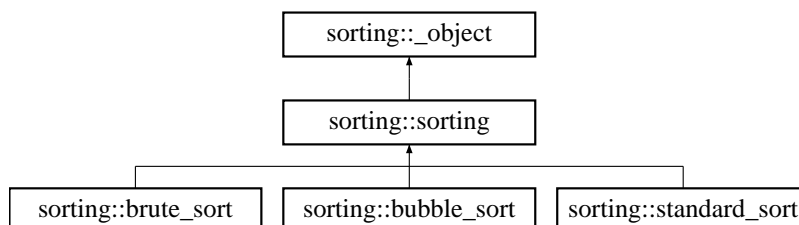
- `sorting_swigregister` = `_sorting.sorting_swigregister`
- `bubble_sort_swigregister` = `_sorting.bubble_sort_swigregister`
- `standard_sort_swigregister` = `_sorting.standard_sort_swigregister`
- `brute_sort_swigregister` = `_sorting.brute_sort_swigregister`

The documentation for this class was generated from the following files:

- `src/sorting.h`
- `src/sorting.py`

## 3.56 `sorting::sorting` Class Reference

Inheritance diagram for `sorting::sorting`:



### Public Member Functions

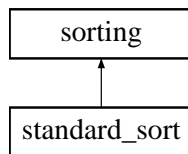
- `def __init__`
- `def sort_data`
- `def SetRefColNum`

The documentation for this class was generated from the following file:

- `src/sorting.py`

## 3.57 `standard_sort` Class Reference

Inheritance diagram for `standard_sort`:



### Public Member Functions

- `standard_sort (Matrix *data)`  
*Constructor.*
- `~standard_sort ()`  
*Destructor.*
- `int sort_data ()`  
*Main function that sorts the given data.*
- `void SetRefColNum (int num)`  
*Set the reference column number.*

### 3.57.1 Member Function Documentation

#### 3.57.1.1 `int standard_sort::sort_data () [virtual]`

Main function that sorts the given data. The algorithm sends the reference column to the standard [sorting](#) operator that is embedded into the C++ standard library

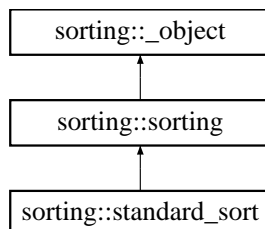
Implements [sorting](#).

The documentation for this class was generated from the following files:

- `src/standard_sort.h`
- `src/standard_sort.cc`

### 3.58 `sorting::standard_sort` Class Reference

Inheritance diagram for `sorting::standard_sort`:



#### Public Member Functions

- `def __init__`
- `def sort_data`
- `def SetRefColNum`

#### Public Attributes

- `this`

The documentation for this class was generated from the following file:

- `src/sorting.py`

## 3.59 swig\_cast\_info Struct Reference

### Public Attributes

- [swig\\_type\\_info](#) \* **type**
- swig\_converter\_func **converter**
- struct [swig\\_cast\\_info](#) \* **next**
- struct [swig\\_cast\\_info](#) \* **prev**

The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.60 swig\_const\_info Struct Reference

### Public Attributes

- int **type**
- char \* **name**
- long **lvalue**
- double **dvalue**
- void \* **pvalue**
- [swig\\_type\\_info](#) \*\* **ptype**

The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.61 swig\_globalvar Struct Reference

### Public Attributes

- char \* **name**
- PyObject \*(\* **get\_attr** )(void)
- int(\* **set\_attr** )(PyObject \*)
- struct [swig\\_globalvar](#) \* **next**

The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.62 swig\_module\_info Struct Reference

### Public Attributes

- [swig\\_type\\_info](#) \*\* **types**
- `size_t` **size**
- `struct swig\_module\_info *` **next**
- [swig\\_type\\_info](#) \*\* **type\_initial**
- [swig\\_cast\\_info](#) \*\* **cast\_initial**
- `void *` **clientdata**

The documentation for this struct was generated from the following files:

- `src/convolute_wrap.cxx`
- `src/fittogrid_wrap.cxx`
- `src/integrator_wrap.cxx`
- `src/leastnonmono_wrap.cxx`
- `src/lininterp_wrap.cxx`
- `src/matrix3d_wrap.cxx`
- `src/matrix4d_wrap.cxx`
- `src/matrix_wrap.cxx`
- `src/maxslope_wrap.cxx`
- `src/monocheck_wrap.cxx`
- `src/pdf_wrap.cxx`
- `src/sorting_wrap.cxx`



## 3.63 swig\_type\_info Struct Reference

### Public Attributes

- const char \* **name**
- const char \* **str**
- swig\_dycast\_func **dcast**
- struct [swig\\_cast\\_info](#) \* **cast**
- void \* **clientdata**
- int **owndata**

The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.64 swig\_varlinkobject Struct Reference

### Public Attributes

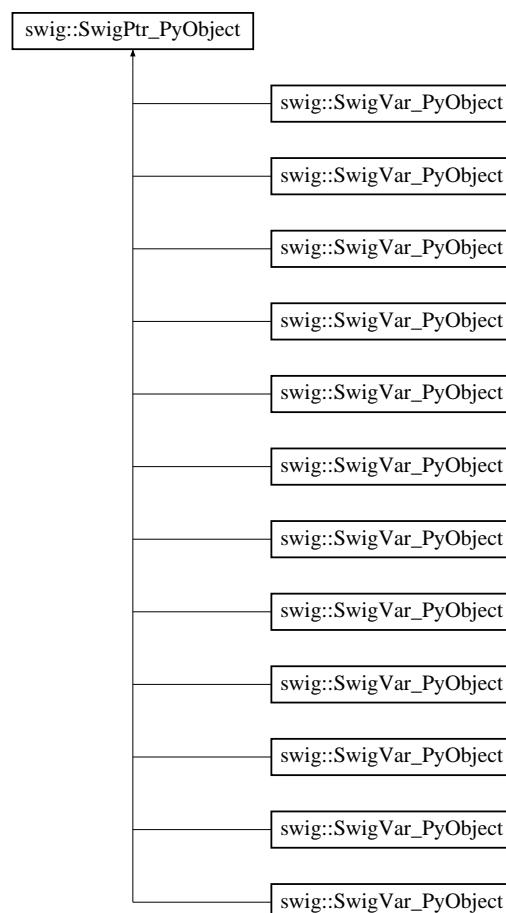
- PyObject\_HEAD [swig\\_globalvar](#) \* vars

The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.65 swig::SwigPtr\_PyObject Class Reference

Inheritance diagram for swig::SwigPtr\_PyObject::



### Public Member Functions

- **SwigPtr\_PyObject** (const [SwigPtr\\_PyObject](#) &item)
- **SwigPtr\_PyObject** (PyObject \*obj, bool initial\_ref=true)
- [SwigPtr\\_PyObject](#) & **operator=** (const [SwigPtr\\_PyObject](#) &item)
- **operator PyObject \*** () const
- PyObject \* **operator->** () const
- **SwigPtr\_PyObject** (const [SwigPtr\\_PyObject](#) &item)
- **SwigPtr\_PyObject** (PyObject \*obj, bool initial\_ref=true)
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- [SwigPtr\\_PyObject](#) & **operator=** (const [SwigPtr\\_PyObject](#) &item)
- **operator PyObject \*** () const
- PyObject \* **operator->** () const

## Protected Attributes

- PyObject \* **\_obj**

The documentation for this class was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.66 SwigPyClientData Struct Reference

### Public Attributes

- PyObject \* **klass**
- PyObject \* **newraw**
- PyObject \* **newargs**
- PyObject \* **destroy**
- int **delargs**
- int **implicitconv**

The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.67 SwigPyObject Struct Reference

### Public Attributes

- PyObject\_HEAD void \* **ptr**
- [swig\\_type\\_info](#) \* **ty**
- int **own**
- PyObject \* **next**

The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.68 SwigPyPacked Struct Reference

### Public Attributes

- PyObject\_HEAD void \* **pack**
- [swig\\_type\\_info](#) \* **ty**
- size\_t **size**

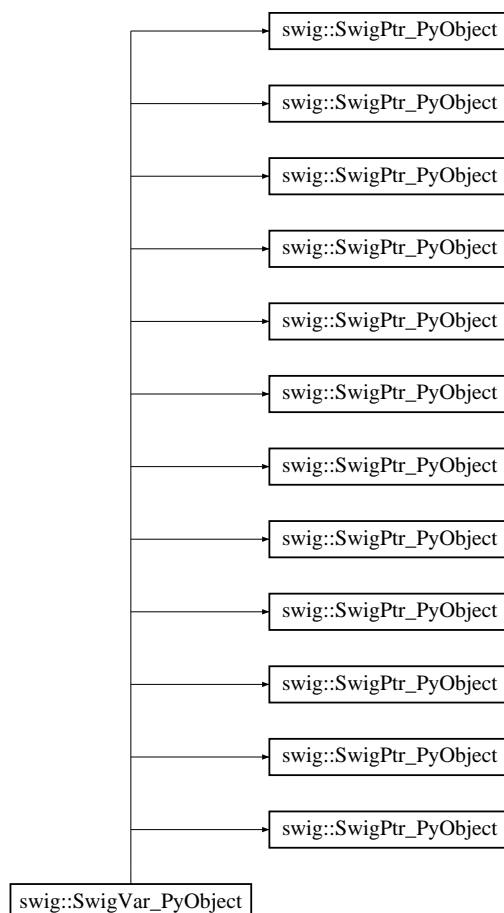
The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx



## 3.69 swig::SwigVar\_PyObject Struct Reference

Inheritance diagram for swig::SwigVar\_PyObject::



### Public Member Functions

- **SwigVar\_PyObject** (PyObject \*obj=0)
- **SwigVar\_PyObject** & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)
- **SwigVar\_PyObject** & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)
- **SwigVar\_PyObject** & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)
- **SwigVar\_PyObject** & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)
- **SwigVar\_PyObject** & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)
- **SwigVar\_PyObject** & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)
- **SwigVar\_PyObject** & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)

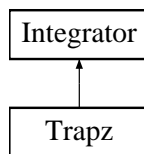
- [SwigVar\\_PyObject](#) & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)
- [SwigVar\\_PyObject](#) & **operator=** (PyObject \*obj)
- **SwigVar\_PyObject** (PyObject \*obj=0)
- [SwigVar\\_PyObject](#) & **operator=** (PyObject \*obj)
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- **SwigVar\_PyObject** (PyObject \*obj=0)
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The documentation for this struct was generated from the following files:

- src/convolute\_wrap.cxx
- src/fittogrid\_wrap.cxx
- src/integrator\_wrap.cxx
- src/leastnonmono\_wrap.cxx
- src/lininterp\_wrap.cxx
- src/matrix3d\_wrap.cxx
- src/matrix4d\_wrap.cxx
- src/matrix\_wrap.cxx
- src/maxslope\_wrap.cxx
- src/monocheck\_wrap.cxx
- src/pdf\_wrap.cxx
- src/sorting\_wrap.cxx

## 3.70 Trapz Class Reference

Inheritance diagram for Trapz::



### Public Member Functions

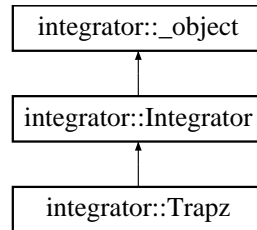
- double **integrate** (const double \*integrand, const double \*Z, const int ZPoints)

The documentation for this class was generated from the following files:

- src/trapz.h
- src/trapz.cc

### 3.71 integrator::Trapz Class Reference

Inheritance diagram for integrator::Trapz::



#### Public Member Functions

- def `__init__`
- def `integrate`

#### Public Attributes

- `this`

The documentation for this class was generated from the following file:

- `src/integrator.py`

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