

MPCOTool

4.0.1

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## Chapter 2

# File Index

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## Chapter 3

# Data Structure Documentation

### 3.1 Experiment Struct Reference

Struct to define the experiment data.

```
#include <experiment.h>
```

#### Data Fields

- char \* [name](#)  
*File name.*
- char \* [stencil](#) [[MAX\\_NINPUTS](#)]  
*Array of template names of input files.*
- double [weight](#)  
*Objective function weight.*
- unsigned int [ninputs](#)  
*Number of input files to the simulator.*

#### 3.1.1 Detailed Description

Struct to define the experiment data.

Definition at line [45](#) of file [experiment.h](#).

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

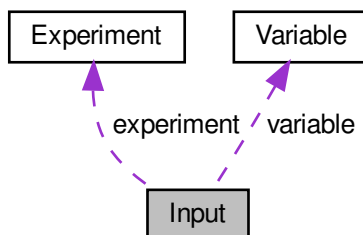
- [experiment.h](#)

## 3.2 Input Struct Reference

Struct to define the optimization input file.

```
#include <input.h>
```

Collaboration diagram for Input:



### Data Fields

- [Experiment](#) \* [experiment](#)  
*Array of experiments.*
- [Variable](#) \* [variable](#)  
*Array of variables.*
- char \* [result](#)  
*Name of the result file.*
- char \* [variables](#)  
*Name of the variables file.*
- char \* [simulator](#)  
*Name of the simulator program.*
- char \* [evaluator](#)  
*Name of the program to evaluate the objective function.*
- char \* [directory](#)  
*Working directory.*
- char \* [name](#)  
*[Input](#) data file name.*
- double [tolerance](#)  
*Algorithm tolerance.*
- double [mutation\\_ratio](#)  
*Mutation probability.*
- double [reproduction\\_ratio](#)  
*Reproduction probability.*
- double [adaptation\\_ratio](#)  
*Adaptation probability.*
- double [relaxation](#)  
*Relaxation parameter.*

- double [p](#)  
*Exponent of the P error norm.*
- double [threshold](#)  
*Threshold to finish the optimization.*
- unsigned long int [seed](#)  
*Seed of the pseudo-random numbers generator.*
- unsigned int [nvariables](#)  
*Variables number.*
- unsigned int [nexperiments](#)  
*Experiments number.*
- unsigned int [nsimulations](#)  
*Simulations number per experiment.*
- unsigned int [algorithm](#)  
*Algorithm type.*
- unsigned int [nsteps](#)  
*Number of steps to do the hill climbing method.*
- unsigned int [climbing](#)  
*Method to estimate the hill climbing.*
- unsigned int [nestimates](#)  
*Number of simulations to estimate the hill climbing.*
- unsigned int [niterations](#)  
*Number of algorithm iterations.*
- unsigned int [nbest](#)  
*Number of best simulations.*
- unsigned int [norm](#)  
*Error norm type.*
- unsigned int [type](#)  
*Type of input file.*

### 3.2.1 Detailed Description

Struct to define the optimization input file.

Definition at line [65](#) of file [input.h](#).

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

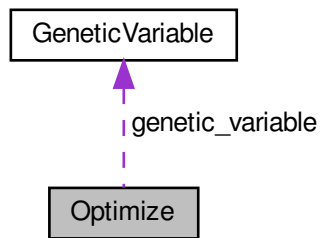
- [input.h](#)

## 3.3 Optimize Struct Reference

Struct to define the optimization ation data.

```
#include <optimize.h>
```

Collaboration diagram for Optimize:



## Data Fields

- GMappedFile \*\* [file](#) [[MAX\\_NINPUTS](#)]  
*Matrix of input template files.*
- char \*\* [experiment](#)  
*Array of experimental data file names.*
- char \*\* [label](#)  
*Array of variable names.*
- gsl\_rng \* [rng](#)  
*GSL random number generator.*
- **GeneticVariable** \* [genetic\\_variable](#)  
*Array of variables for the genetic algorithm.*
- FILE \* [file\\_result](#)  
*Result file.*
- FILE \* [file\\_variables](#)  
*Variables file.*
- char \* [result](#)  
*Name of the result file.*
- char \* [variables](#)  
*Name of the variables file.*
- char \* [simulator](#)  
*Name of the simulator program.*
- char \* [evaluator](#)  
*Name of the program to evaluate the objective function.*
- double \* [value](#)  
*Array of variable values.*
- double \* [rangemin](#)  
*Array of minimum variable values.*
- double \* [rangemax](#)  
*Array of maximum variable values.*
- double \* [rangeminabs](#)  
*Array of absolute minimum variable values.*
- double \* [rangemaxabs](#)  
*Array of absolute maximum variable values.*

- double \* [error\\_best](#)  
*Array of the best minimum errors.*
- double \* [weight](#)  
*Array of the experiment weights.*
- double \* [step](#)  
*Array of hill climbing method step sizes.*
- double \* [climbing](#)  
*Vector of hill climbing estimation.*
- double \* [value\\_old](#)  
*Array of the best variable values on the previous step.*
- double \* [error\\_old](#)  
*Array of the best minimum errors on the previous step.*
- unsigned int \* [precision](#)  
*Array of variable precisions.*
- unsigned int \* [nsweeps](#)  
*Array of sweeps of the sweep algorithm.*
- unsigned int \* [nbits](#)  
*Array of bits number of the genetic algorithm.*
- unsigned int \* [thread](#)  
*Array of simulation numbers to calculate on the thread.*
- unsigned int \* [thread\\_climbing](#)
- unsigned int \* [simulation\\_best](#)  
*Array of best simulation numbers.*
- double [tolerance](#)  
*Algorithm tolerance.*
- double [mutation\\_ratio](#)  
*Mutation probability.*
- double [reproduction\\_ratio](#)  
*Reproduction probability.*
- double [adaptation\\_ratio](#)  
*Adaptation probability.*
- double [relaxation](#)  
*Relaxation parameter.*
- double [calculation\\_time](#)  
*Calculation time.*
- double [p](#)  
*Exponent of the P error norm.*
- double [threshold](#)  
*Threshold to finish the optimization.*
- unsigned long int [seed](#)  
*Seed of the pseudo-random numbers generator.*
- unsigned int [nvariables](#)  
*Variables number.*
- unsigned int [nexperiments](#)  
*Experiments number.*
- unsigned int [ninputs](#)  
*Number of input files to the simulator.*
- unsigned int [nsimulations](#)  
*Simulations number per experiment.*
- unsigned int [nsteps](#)  
*Number of steps for the hill climbing method.*

- unsigned int [nestimates](#)  
*Number of simulations to estimate the climbing.*
- unsigned int [algorithm](#)  
*Algorithm type.*
- unsigned int [nstart](#)  
*Beginning simulation number of the task.*
- unsigned int [nend](#)  
*Ending simulation number of the task.*
- unsigned int [nstart\\_climbing](#)  
*Beginning simulation number of the task for the hill climbing method.*
- unsigned int [nend\\_climbing](#)  
*Ending simulation number of the task for the hill climbing method.*
- unsigned int [niterations](#)  
*Number of algorithm iterations.*
- unsigned int [nbest](#)  
*Number of best simulations.*
- unsigned int [nsaveds](#)  
*Number of saved simulations.*
- unsigned int [stop](#)  
*To stop the simulations.*
- int [mpi\\_rank](#)  
*Number of MPI task.*

### 3.3.1 Detailed Description

Struct to define the optimization ation data.

Definition at line 45 of file [optimize.h](#).

### 3.3.2 Field Documentation

#### 3.3.2.1 thread\_climbing

```
unsigned int* Optimize::thread_climbing
```

Array of simulation numbers to calculate on the thread for the hill climbing method.

Definition at line 79 of file [optimize.h](#).

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

- [optimize.h](#)

## 3.4 Options Struct Reference

Struct to define the options dialog.

```
#include <interface.h>
```

### Data Fields

- `GtkDialog * dialog`  
*Main GtkDialog.*
- `GtkGrid * grid`  
*Main GtkGrid.*
- `GtkLabel * label_seed`  
*Pseudo-random numbers generator seed GtkLabel.*
- `GtkSpinButton * spin_seed`  
*Pseudo-random numbers generator seed GtkSpinButton.*
- `GtkLabel * label_threads`  
*Threads number GtkLabel.*
- `GtkSpinButton * spin_threads`  
*Threads number GtkSpinButton.*
- `GtkLabel * label_climbing`  
*Climbing threads number GtkLabel.*
- `GtkSpinButton * spin_climbing`  
*Climbing threads number GtkSpinButton.*

### 3.4.1 Detailed Description

Struct to define the options dialog.

Definition at line 48 of file [interface.h](#).

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

- [interface.h](#)

## 3.5 ParallelData Struct Reference

Struct to pass to the GThreads parallelized function.

```
#include <optimize.h>
```

### Data Fields

- `unsigned int thread`  
*Thread number.*

### 3.5.1 Detailed Description

Struct to pass to the GThreads parallelized function.

Definition at line 121 of file [optimize.h](#).

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

- [optimize.h](#)

## 3.6 Running Struct Reference

Struct to define the running dialog.

```
#include <interface.h>
```

### Data Fields

- GtkDialog \* [dialog](#)  
*Main GtkDialog.*
- GtkLabel \* [label](#)  
*Label GtkLabel.*
- GtkSpinner \* [spinner](#)  
*Animation GtkSpinner.*
- GtkGrid \* [grid](#)  
*Grid GtkGrid.*

### 3.6.1 Detailed Description

Struct to define the running dialog.

Definition at line 66 of file [interface.h](#).

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

- [interface.h](#)

## 3.7 Variable Struct Reference

Struct to define the variable data.

```
#include <variable.h>
```



## Data Fields

- char \* [name](#)  
*Variable name.*
- double [rangemin](#)  
*Minimum variable value.*
- double [rangemax](#)  
*Maximum variable value.*
- double [rangeminabs](#)  
*Absolute minimum variable value.*
- double [rangemaxabs](#)  
*Absolute maximum variable value.*
- double [step](#)  
*Hill climbing method step size.*
- unsigned int [precision](#)  
*Variable precision.*
- unsigned int [nsweeps](#)  
*Sweeps of the sweep algorithm.*
- unsigned int [nbits](#)  
*Bits number of the genetic algorithm.*

### 3.7.1 Detailed Description

Struct to define the variable data.

Definition at line 54 of file [variable.h](#).

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

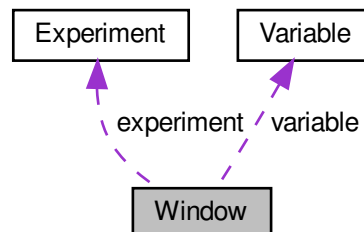
- [variable.h](#)

## 3.8 Window Struct Reference

Struct to define the main window.

```
#include <interface.h>
```

Collaboration diagram for Window:



## Data Fields

- GtkWidget \* [window](#)  
*Main GtkWidget.*
- GtkWidget \* [grid](#)  
*Main GtkWidget.*
- GtkWidget \* [box\\_buttons](#)  
*GtkBox to store the main buttons.*
- GtkWidget \* [button\\_open](#)  
*Open GtkWidget.*
- GtkWidget \* [button\\_save](#)  
*Save GtkWidget.*
- GtkWidget \* [button\\_run](#)  
*Run GtkWidget.*
- GtkWidget \* [button\\_options](#)  
*Options GtkWidget.*
- GtkWidget \* [button\\_help](#)  
*Help GtkWidget.*
- GtkWidget \* [button\\_about](#)  
*Help GtkWidget.*
- GtkWidget \* [button\\_exit](#)  
*Exit GtkWidget.*
- GtkWidget \* [grid\\_files](#)  
*Files GtkWidget.*
- GtkWidget \* [label\\_simulator](#)  
*Simulator program GtkWidget.*
- GtkWidget \* [button\\_simulator](#)  
*Simulator program GtkWidget.*
- GtkWidget \* [check\\_evaluator](#)  
*Evaluator program GtkWidget.*
- GtkWidget \* [button\\_evaluator](#)  
*Evaluator program GtkWidget.*
- GtkWidget \* [label\\_result](#)  
*Result file GtkWidget.*
- GtkWidget \* [entry\\_result](#)  
*Result file GtkWidget.*
- GtkWidget \* [label\\_variables](#)  
*Variables file GtkWidget.*
- GtkWidget \* [entry\\_variables](#)  
*Variables file GtkWidget.*
- GtkWidget \* [frame\\_norm](#)  
*GtkFrame to set the error norm.*
- GtkWidget \* [grid\\_norm](#)  
*GtkGrid to set the error norm.*
- GtkWidget \* [button\\_norm](#) [NNORMS]  
*Array of GtkRadioButtons to set the error norm.*
- GtkWidget \* [label\\_p](#)  
*GtkLabel to set the p parameter.*
- GtkWidget \* [spin\\_p](#)  
*GtkSpinButton to set the p parameter.*
- GtkWidget \* [scrolled\\_p](#)

- GtkScrolledWindow to set the p parameter.*
- GtkFrame \* [frame\\_algorithm](#)
  - GtkFrame to set the algorithm.*
- GtkGrid \* [grid\\_algorithm](#)
  - GtkGrid to set the algorithm.*
- GtkRadioButton \* [button\\_algorithm](#) [NALGORITHMS]
  - Array of GtkRadioButtons to set the algorithm.*
- GtkLabel \* [label\\_simulations](#)
  - GtkLabel to set the simulations number.*
- GtkSpinButton \* [spin\\_simulations](#)
  - GtkSpinButton to set the simulations number.*
- GtkLabel \* [label\\_iterations](#)
  - GtkLabel to set the iterations number.*
- GtkSpinButton \* [spin\\_iterations](#)
  - GtkSpinButton to set the iterations number.*
- GtkLabel \* [label\\_tolerance](#)
  - GtkLabel to set the tolerance.*
- GtkSpinButton \* [spin\\_tolerance](#)
  - GtkSpinButton to set the tolerance.*
- GtkLabel \* [label\\_best](#)
  - GtkLabel to set the best number.*
- GtkSpinButton \* [spin\\_best](#)
  - GtkSpinButton to set the best number.*
- GtkLabel \* [label\\_population](#)
  - GtkLabel to set the population number.*
- GtkSpinButton \* [spin\\_population](#)
  - GtkSpinButton to set the population number.*
- GtkLabel \* [label\\_generations](#)
  - GtkLabel to set the generations number.*
- GtkSpinButton \* [spin\\_generations](#)
  - GtkSpinButton to set the generations number.*
- GtkLabel \* [label\\_mutation](#)
  - GtkLabel to set the mutation ratio.*
- GtkSpinButton \* [spin\\_mutation](#)
  - GtkSpinButton to set the mutation ratio.*
- GtkLabel \* [label\\_reproduction](#)
  - GtkLabel to set the reproduction ratio.*
- GtkSpinButton \* [spin\\_reproduction](#)
  - GtkSpinButton to set the reproduction ratio.*
- GtkLabel \* [label\\_adaptation](#)
  - GtkLabel to set the adaptation ratio.*
- GtkSpinButton \* [spin\\_adaptation](#)
  - GtkSpinButton to set the adaptation ratio.*
- GtkCheckButton \* [check\\_climbing](#)
  - GtkCheckButton to check running the hill climbing method.*
- GtkGrid \* [grid\\_climbing](#)
  - GtkGrid to pack the hill climbing method widgets.*
- GtkRadioButton \* [button\\_climbing](#) [NCLIMBINGS]
  - Array of GtkRadioButtons array to set the hill climbing method.*
- GtkLabel \* [label\\_steps](#)
  - GtkLabel to set the steps number.*

- GtkSpinButton \* [spin\\_steps](#)  
*GtkSpinButton to set the steps number.*
- GtkLabel \* [label\\_estimates](#)  
*GtkLabel to set the estimates number.*
- GtkSpinButton \* [spin\\_estimates](#)  
*GtkSpinButton to set the estimates number.*
- GtkLabel \* [label\\_relaxation](#)  
*GtkLabel to set the relaxation parameter.*
- GtkSpinButton \* [spin\\_relaxation](#)  
*GtkSpinButton to set the relaxation parameter.*
- GtkLabel \* [label\\_threshold](#)  
*GtkLabel to set the threshold.*
- GtkSpinButton \* [spin\\_threshold](#)  
*GtkSpinButton to set the threshold.*
- GtkScrolledWindow \* [scrolled\\_threshold](#)  
*GtkScrolledWindow to set the threshold.*
- GtkFrame \* [frame\\_variable](#)  
*Variable GtkFrame.*
- GtkGrid \* [grid\\_variable](#)  
*Variable GtkGrid.*
- GtkComboBoxText \* [combo\\_variable](#)  
*GtkComboBoxEntry to select a variable.*
- GtkButton \* [button\\_add\\_variable](#)  
*GtkButton to add a variable.*
- GtkButton \* [button\\_remove\\_variable](#)  
*GtkButton to remove a variable.*
- GtkLabel \* [label\\_variable](#)  
*Variable GtkLabel.*
- GtkEntry \* [entry\\_variable](#)  
*GtkEntry to set the variable name.*
- GtkLabel \* [label\\_min](#)  
*Minimum GtkLabel.*
- GtkSpinButton \* [spin\\_min](#)  
*Minimum GtkSpinButton.*
- GtkScrolledWindow \* [scrolled\\_min](#)  
*Minimum GtkScrolledWindow.*
- GtkLabel \* [label\\_max](#)  
*Maximum GtkLabel.*
- GtkSpinButton \* [spin\\_max](#)  
*Maximum GtkSpinButton.*
- GtkScrolledWindow \* [scrolled\\_max](#)  
*Maximum GtkScrolledWindow.*
- GtkCheckButton \* [check\\_minabs](#)  
*Absolute minimum GtkCheckButton.*
- GtkSpinButton \* [spin\\_minabs](#)  
*Absolute minimum GtkSpinButton.*
- GtkScrolledWindow \* [scrolled\\_minabs](#)  
*Absolute minimum GtkScrolledWindow.*
- GtkCheckButton \* [check\\_maxabs](#)  
*Absolute maximum GtkCheckButton.*
- GtkSpinButton \* [spin\\_maxabs](#)

- Absolute maximum GtkSpinButton.*
- GtkScrolledWindow \* [scrolled\\_maxabs](#)
  - Absolute maximum GtkScrolledWindow.*
- GtkLabel \* [label\\_precision](#)
  - Precision GtkLabel.*
- GtkSpinButton \* [spin\\_precision](#)
  - Precision digits GtkSpinButton.*
- GtkLabel \* [label\\_sweeps](#)
  - Sweeps number GtkLabel.*
- GtkSpinButton \* [spin\\_sweeps](#)
  - Sweeps number GtkSpinButton.*
- GtkLabel \* [label\\_bits](#)
  - Bits number GtkLabel.*
- GtkSpinButton \* [spin\\_bits](#)
  - Bits number GtkSpinButton.*
- GtkLabel \* [label\\_step](#)
  - GtkLabel to set the step.*
- GtkSpinButton \* [spin\\_step](#)
  - GtkSpinButton to set the step.*
- GtkScrolledWindow \* [scrolled\\_step](#)
  - step GtkScrolledWindow.*
- GtkFrame \* [frame\\_experiment](#)
  - Experiment GtkFrame.*
- GtkGrid \* [grid\\_experiment](#)
  - Experiment GtkGrid.*
- GtkComboBoxText \* [combo\\_experiment](#)
  - Experiment GtkComboBoxEntry.*
- GtkButton \* [button\\_add\\_experiment](#)
  - GtkButton to add a experiment.*
- GtkButton \* [button\\_remove\\_experiment](#)
  - GtkButton to remove a experiment.*
- GtkLabel \* [label\\_experiment](#)
  - Experiment GtkLabel.*
- GtkButton \* [button\\_experiment](#)
  - GtkButton to set the experimental data file.*
- GtkLabel \* [label\\_weight](#)
  - Weight GtkLabel.*
- GtkSpinButton \* [spin\\_weight](#)
  - Weight GtkSpinButton.*
- GtkCheckButton \* [check\\_template](#) [MAX\_NINPUTS]
  - Array of GtkCheckButtons to set the input templates.*
- GtkButton \* [button\\_template](#) [MAX\_NINPUTS]
  - Array of GtkButtons to set the input templates.*
- GdkPixbuf \* [logo](#)
  - Logo GdkPixbuf.*
- [Experiment](#) \* [experiment](#)
  - Array of experiments data.*
- [Variable](#) \* [variable](#)
  - Array of variables data.*
- char \* [application\\_directory](#)
  - Application directory.*

- gulong [id\\_experiment](#)  
*Identifier of the combo\_experiment signal.*
- gulong [id\\_experiment\\_name](#)  
*Identifier of the button\_experiment signal.*
- gulong [id\\_variable](#)  
*Identifier of the combo\_variable signal.*
- gulong [id\\_variable\\_label](#)  
*Identifier of the entry\_variable signal.*
- gulong [id\\_template](#) [MAX\_NINPUTS]  
*Array of identifiers of the check\_template signal.*
- gulong [id\\_input](#) [MAX\_NINPUTS]  
*Array of identifiers of the button\_template signal.*
- unsigned int [nexperiments](#)  
*Number of experiments.*
- unsigned int [nvariables](#)  
*Number of variables.*

### 3.8.1 Detailed Description

Struct to define the main window.

Definition at line 78 of file [interface.h](#).

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

- [interface.h](#)

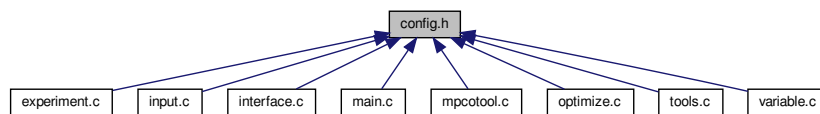
## Chapter 4

# File Documentation

### 4.1 config.h File Reference

Configuration header file.

This graph shows which files directly or indirectly include this file:



### Macros

- `#define MAX_NINPUTS 8`  
*Maximum number of input files in the simulator program.*
- `#define NALGORITHMS 4`  
*Number of stochastic algorithms.*
- `#define NCLIMBINGS 2`  
*Number of hill climbing estimate methods.*
- `#define NNORMS 4`  
*Number of error norms.*
- `#define NPRECISIONS 15`  
*Number of precisions.*
- `#define DEFAULT_PRECISION (NPRECISIONS - 1)`  
*Default precision digits.*
- `#define DEFAULT_RANDOM_SEED 7007`  
*Default pseudo-random numbers seed.*
- `#define DEFAULT_RELAXATION 1.`  
*Default relaxation parameter.*
- `#define LOCALE_DIR "locales"`  
*Locales directory.*

- #define PROGRAM\_INTERFACE "mpcotool"  
*Name of the interface program.*
- #define LABEL\_ABSOLUTE\_MINIMUM "absolute\_minimum"  
*absolute minimum label.*
- #define LABEL\_ABSOLUTE\_MAXIMUM "absolute\_maximum"  
*absolute maximum label.*
- #define LABEL\_ADAPTATION "adaptation"  
*adaption label.*
- #define LABEL\_ALGORITHM "algorithm"  
*algoritm label.*
- #define LABEL\_CLIMBING "climbing"  
*climbing label.*
- #define LABEL\_COORDINATES "coordinates"  
*coordinates label.*
- #define LABEL\_EUCLIDIAN "euclidian"  
*euclidian label.*
- #define LABEL\_EVALUATOR "evaluator"  
*evaluator label.*
- #define LABEL\_EXPERIMENT "experiment"  
*experiment label.*
- #define LABEL\_EXPERIMENTS "experiments"  
*experiment label.*
- #define LABEL\_GENETIC "genetic"  
*genetic label.*
- #define LABEL\_MINIMUM "minimum"  
*minimum label.*
- #define LABEL\_MAXIMUM "maximum"  
*maximum label.*
- #define LABEL\_MONTE\_CARLO "Monte-Carlo"  
*Monte-Carlo label.*
- #define LABEL\_MUTATION "mutation"  
*mutation label.*
- #define LABEL\_NAME "name"  
*name label.*
- #define LABEL\_NBEST "nbest"  
*nbest label.*
- #define LABEL\_NBITS "nbits"  
*nbits label.*
- #define LABEL\_NESTIMATES "nestimates"  
*nestimates label.*
- #define LABEL\_NGENERATIONS "ngenerations"  
*ngenerations label.*
- #define LABEL\_NITERATIONS "niterations"  
*niterations label.*
- #define LABEL\_NORM "norm"  
*norm label.*
- #define LABEL\_NPOPULATION "npopulation"  
*npopulation label.*
- #define LABEL\_NSIMULATIONS "nsimulations"  
*nsimulations label.*
- #define LABEL\_NSTEPS "nsteps"



- nsteps label.*
- #define LABEL\_NSWEEPS "nsweeps"  
*nsweeps label.*
- #define LABEL\_OPTIMIZE "optimize"  
*optimize label.*
- #define LABEL\_ORTHOGONAL "orthogonal"  
*orthogonal label.*
- #define LABEL\_P "p"  
*p label.*
- #define LABEL\_PRECISION "precision"  
*precision label.*
- #define LABEL\_RANDOM "random"  
*random label.*
- #define LABEL\_RELAXATION "relaxation"  
*relaxation label.*
- #define LABEL\_REPRODUCTION "reproduction"  
*reproduction label.*
- #define LABEL\_RESULT\_FILE "result\_file"  
*result\_file label.*
- #define LABEL\_SIMULATOR "simulator"  
*simulator label.*
- #define LABEL\_SEED "seed"  
*seed label.*
- #define LABEL\_STEP "step"  
*step label.*
- #define LABEL\_SWEEP "sweep"  
*sweep label.*
- #define LABEL\_TAXICAB "taxicab"  
*taxicab label.*
- #define LABEL\_TEMPLATE1 "template1"  
*template1 label.*
- #define LABEL\_TEMPLATE2 "template2"  
*template2 label.*
- #define LABEL\_TEMPLATE3 "template3"  
*template3 label.*
- #define LABEL\_TEMPLATE4 "template4"  
*template4 label.*
- #define LABEL\_TEMPLATE5 "template5"  
*template5 label.*
- #define LABEL\_TEMPLATE6 "template6"  
*template6 label.*
- #define LABEL\_TEMPLATE7 "template7"  
*template7 label.*
- #define LABEL\_TEMPLATE8 "template8"  
*template8 label.*
- #define LABEL\_THRESHOLD "threshold"  
*threshold label.*
- #define LABEL\_TOLERANCE "tolerance"  
*tolerance label.*
- #define LABEL\_VARIABLE "variable"  
*variable label.*