

## Help

```
#if defined(PremiaCurrentVersion) && PremiaCurrentVersion <
    (2008+2) //The "#else" part of the code will be freely available
    after the (year of creation of this file + 2)
#else
/*****
*   CPS - A simple C PDE solver
*
*   Copyright (c) 2007,
*   Maya Briani      <m.briani@iac.rm.cnr.it>,
*   Francesco Ferreri <francesco.ferreri@gmail.com>,
*   Roberto Natalini <r.natalini@iac.rm.cnr.it>,
*   Marco Papi       <m.papi@iac.rm.cnr.it>
*
*****/
#ifndef STENCIL_H
#define STENCIL_H

#include "cps_function.h"
#include "cps_grid.h"
#include "cps_grid_node.h"

#define MAX_STENCIL_SIZE 9

#define MAX_MODES 2
#define MAX_TIMES 2

#define MODE_EXP 0
#define MODE_IMP 1
#define TIME_CUR 0
#define TIME_NXT 1

#define XY      0    /* i,j      */
#define XPY     1    /* i+1,j    */
#define XPYM    2    /* i+1,j-1  */
#define XYM     3    /* i,j-1    */
#define XMYM    4    /* i-1,j-1  */
#define XMY     5    /* i-1,j    */
#define XMYP    6    /* i-1,j+1  */
#define XYP     7    /* i,j+1    */
#define XPYP    8    /* i+1,j+1  */
```

```
struct stencil_t
{
    double      weight[MAX_TIMES][MAX_MODES];
    double      factor;
    const       function *function_factor;
    double      value[MAX_STENCIL_SIZE];
};

int stencil_create(stencil **);
int stencil_destroy(stencil **);
int stencil_set_factor(stencil *, double);
int stencil_set_function_factor(stencil *, const function *
    );
int stencil_set_value(stencil *, int, double);
int stencil_set_weight(stencil *, int, int, double);
int stencil_apply(stencil *, const grid *, int, int, const
    grid_node *, stencil_pattern **);
int stencil_evaluate(stencil *, int, int, int, const grid_
    node *, double *);
#endif

#endif //PremiaCurrentVersion
```

## References