

Help

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#if defined(PremiaCurrentVersion) && PremiaCurrentVersion <
    (2008+2) //The "#else" part of the code will be freely av
    ailable after the (year of creation of this file + 2)
#else
/*****
*   CPS - A simple C PDE solver                                *
*                                                                *
*   Copyright (c) 2007,                                        *
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*                                                                *
*****/
#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 XMYM    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