

[Help](#)

```

#ifndef _WIENERHOPFRS_H
#define _WIENERHOPFRS_H

#include <stdlib.h>
#include <math.h>

#include "pnl/pnl_vector.h"
#include "pnl/pnl_matrix.h"
#include "pnl/pnl_fft.h"
// #include "vector.h"
// #include "dft.h"

/*////////////////////////////////////////*/
void realfastfouriertransform(PnlVect *a, int tnn, int inversefft);

int readparamskou_rs(int *nstates, PnlVect **rr, PnlVect **divi, PnlVect **sigma,
                    PnlVect **num, PnlVect **nup, PnlVect **cnum, PnlVect **cnup,
                    PnlVect **r, PnlVect **divid, PnlMat *lam,
                    double T, double h, PnlVect *Strike1,
                    double er, long int step, double eps,
                    PnlVect *ptprice, PnlVect *ptdelta);

int fastwienerhopfamerican_rs(int model, long int Nr, PnlVect *mu, PnlVect *qu, double o,
                              int ifCall, double Spot, PnlVect *lm1, PnlVect *lp1,
                              PnlVect *num, PnlVect *nup, PnlVect *cnum, PnlVect *cnup,
                              PnlVect *r, PnlVect *divid, PnlMat *lam,
                              double T, double h, PnlVect *Strike1,
                              double bar, PnlVect *rebate,
                              double er, long int step, double eps,
                              PnlVect *ptprice, PnlVect *ptdelta);

int fastwienerhopf_hs(int model, long int Nr, PnlVect *mu, PnlVect *qu, double o,
                     int ifCall, double Spot, double lm1, double lp1,

```

```
PnlVect *sg, PnlVect *num, PnlVect *nup, double cnum, double  
double r, double divid, PnlMat *lam,  
double T, double h, double Strike1,  
double bar, double rebate,  
double er, long int step, PnlVect *ptprice, PnlVect *ptdel  
int fastwienerhopfamer_hs(int model, long int Nr, PnlVect *mu, PnlVect *qu, double  
int ifCall, double Spot, double lm1, double lp1,  
PnlVect *sg, PnlVect *num, PnlVect *nup, double cnum,  
double r, double divi, PnlMat *lam,  
double T, double h, double Strike1,  
double er, long int step, PnlVect *ptprice, PnlVect *p  
  
#endif
```