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```
#ifndef _BS1D_DOUBLIM_H
#define _BS1D_DOUBLIM_H

#include "bs1d/bs1d.h"
#include "doublim/doublim.h"

#include "pnl/pnl_mathtools.h"
#include "pnl/pnl_random.h"
#include "pnl/pnl_cdf.h"
#include "numfunc.h"
#include "transopt.h"
#include "pnl/pnl_complex.h"

/* Utility function shared
 *
 *
 */

extern int MOD_OPT(PutOut_KunitomoIkeda_91_lib)(double s, NumFunc_1 *L, NumFunc_1 *R,
double t, double r, double divid, double sigma, double *ptprice, double *ptd)

extern int MOD_OPT(CallOut_KunitomoIkeda_91_lib)(double s, NumFunc_1 *L, NumFunc_1 *R,
double t, double r, double divid, double sigma, double *ptprice, double *ptd)

extern double MOD_OPT(Boundary_lib)(double s, NumFunc_1 *p, double t, double r,

/* aliases */

#define Boundary MOD_OPT(Boundary_lib)
#define CallOut_KunitomoIkeda_91 MOD_OPT(CallOut_KunitomoIkeda_91_lib)
#define PutOut_KunitomoIkeda_91 MOD_OPT(PutOut_KunitomoIkeda_91_lib)

#endif
```