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```
#if defined(PremiaCurrentVersion) && PremiaCurrentVersion <
    (2007+2) //The "#else" part of the code will be freely av
    ailable after the (year of creation of this file + 2)
#else

#ifndef LEVYFD_H
#define LEVYFD_H

#include <iostream>
#include <fstream>
#include <vector>
#include "progonka.h"
#include "numerics.h"
#include "levy.h"

class Grid
{
    double Al;
    double Ar;
    double dx;
    int N;

public :

    Grid(const double dAl, const double dAr, const int dN);
    inline double x(double i) const
    {
        return Al + i * dx;
    }
};

double init_cond(const double x, const double S0,
                 const double K, const int product);

double bound_cond(const double x, const double S0, const
                 double K, const double rebate,
                 const double ttm, const double r,
                 const int product, const int product_type
                 );
```

```

/*Explicit-implicit finite difference scheme*/
vector<double> price2(int am, const Levy_measure &measure,
    int product,
                                int product_type, double r, double
    divid, double S0,
                                double K, double rebate, double A1,
    double Ar,
                                int Nspace, double T, int Ntime,
    double &price0, double &delta0);
/*Meaning of arguments:
- product: Call(1), Put(2), or forward(3);
- product_type: European vanilla (1), Up-and-Out(2), Dow
n-and-Out(3), or double barrier out option(4);
- rebate: constant rebate in the barrier case;
- price0, delta0: output variables*/

/*Centered version of the explicit-implicit scheme*/
vector<double> price2c(int am, const Levy_measure &measure,
    int product,
                                int product_type, double r, double
    divid, double S0,
                                double K, double rebate, double A1,
    double Ar,
                                int Nspace, double T, int Ntime,
    double &price0, double &delta0);
#endif

#endif //PremiaCurrentVersion

```

References