Source | Model Presentation

dup1d

1 Description

We consider a market model of local volatility where the evolution of the stock-price is governed by the stochastic differential equation

$$\frac{dS_t}{S_t} = (r - \delta)dt + \sigma(t, S_t)dB_t, \tag{1}$$

where the interest rate r and the dividend rate δ are nonnegative constants and $(B_t)_{0\leq t\leq T}$ is a standard Brownian motion. The volatility σ is a $C^{1,2}$ function and is assumed to be uniformly bounded.

2 Code Implementation

```
#ifndef _DUPIRE1D_H
#define _DUPIRE1D_H

#include "optype.h"
#include "var.h"

#define TYPEMOD DUP1D

/*1D Dupire World*/
typedef struct TYPEMOD{
  VAR T;
  VAR S0;
  VAR Mu;
  VAR Sigma;
  VAR Divid;
  VAR R;
} TYPEMOD;
```

```
#endif
```