Source | Model Presentation

cirpp1d

1 Description

CIR++ models are defined by an EDS which describes the evolution of the spot rate $r(t)$:

$$\begin{cases} dx(t) = a(b - x(t))\,dt + \sigma\sqrt{x(t)}\,dW(t), \quad x(0) = x_0 \\ r(t) = x(t) + \phi(t). \end{cases}$$

Where the function ϕ is a deterministic function totally given by the market values of the zero coupon bonds.

2 Code Implementation

```
#ifndef _CirPlus1D_H
#define _CirPlus1D_H

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

#define TYPEMOD CirPP1D


/*1D Cir++ World*/
typedef struct TYPEMOD{
  VAR T;
  VAR flat_flag;
  VAR a;
  VAR b;
```

```
  VAR Sigma;
  VAR InitialYields;
} TYPEMOD;

extern double MOD(GetYield)(TYPEMOD *pt);


#endif
```