Source | Model Presentation

blackkarasinski1d

1 Description

Black-Karasinski models [1] are defined by an EDS which describes the evolution of the spot rate $r(t)$:

$$d\ln r_t = (\theta_t - a\ln r_t)dt + \sigma\, dW(t), \quad r(0) = r_0$$

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

2 Code Implementation

```
#ifndef _BlackKarasinski1D_H
#define _BlackKarasinski1D_H

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

#define TYPEMOD BlackKarasinski1D



/*1D  BlackKarasinski World*/
typedef struct TYPEMOD{
  VAR T;
  VAR flat_flag;
  VAR r0;
  VAR a;
  VAR Sigma;
```

```
} TYPEMOD;

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


#endif
```

References

[1] F.Black and P.Karasinski. Bond and option pricing when short rates are lognormal. *Financial Analyst Journal*, Juli-August:52–59, 1991. 1