

vasicek1d

1 Description

Vasicek model [1] is defined by an EDS which describes the evolution of the spot rate r_t :

$$dr_t = k(\theta - r_t)dt + \sigma dW(t)$$

2 Code Implementation

```
#ifndef _Vasicek1D_H
#define _Vasicek1D_H

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

#define TYPEMOD Vasicek1D

/*1D Vasicek World*/

typedef struct TYPEMOD
{
    VAR T;
    VAR r0;
    VAR k;
    VAR Sigma;
    VAR theta;
} TYPEMOD;

#endif
```

References

- [1] O.Vasicek. An equilibrium characterisaton of the term structure. *Journal Financial Economics*, 5:177–188, 1977. [1](#)