

stein1d

1 Description

This model is given by,

$$\begin{aligned}dS_t &= rS_t dt + v_t S_t dW_t^1, \\ dv_t &= k(\theta - v_t)dt + \sigma dW_t^2,\end{aligned}$$

where W^1 and W^2 are two correlated brownian motions with $\langle W^1, W^2 \rangle_t = \rho t$, and k, θ and σ are constants.

2 Code Implementation

```
#ifndef _STEIN1D_H
#define _STEIN1D_H

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

#define TYPEMOD STEIN1D

/*1D STEIN World*/
typedef struct TYPEMOD
{
    VAR T;
    VAR S0;
    VAR Divid;
    VAR R;
    VAR Sigma0;
    VAR MeanReversion;
    VAR LongRunVariance;
```

```
    VAR Sigma;  
    VAR Rho;  
} TYPEMOD;  
  
#endif
```