Source | Model Presentation

hes1d

1 Description

This model is given by,

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

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 _HES1D_H
#define _HES1D_H

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

#define TYPEMOD HES1D

/*1D HESTON World*/

typedef struct TYPEMOD{
  VAR T;
  VAR S0;
  VAR Divid;
  VAR R;
  VAR Sigma0;
  VAR MeanReversion;
```

```
  VAR LongRunVariance;
  VAR Sigma;
  VAR Rho;
} TYPEMOD;


#endif
```