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hes1d

1 Description

This model is given by,

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

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 _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 SO;
    VAR Divid;
    VAR R;
    VAR Sigma0;
```

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

```
#endif
```