

mc_alfonsi

Input parameters

- Number of iterations N
- Number of discretization steps M
- Generator type
- Increment inc
- Confidence Value

Output parameters

- Price P
- Error price σ_P
- Delta δ
- Error delta σ_{delta}
- Price Confidence Interval: ICp [Inf Price, Sup Price]
- Delta Confidence Interval: ICp [Inf Delta, Sup Delta]

Description

Computation of a european option in the Heston stochastic volatility model.
This model is given by,

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

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 Description of the algorithm is given in [there](#)