

Pricing of average strike Asian call option using numerical PDE methods

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In this paper, a standard PDE for the pricing of arithmetic average strike Asian call option is presented. A Crank-Nicolson Implicit Method and a Higher Order Compact finite difference scheme for this pricing problem is derived. Both these schemes were implemented for various values of risk free rate and volatility. The option prices for the same set of values of risk free rate and volatility was also computed using Monte Carlo simulation. The comparative results of the two numerical PDE methods shows close match with the Monte Carlo results, with the Higher Order Compact scheme exhibiting a better match. To the best of our knowledge, this is the first work to use the numerical PDE approach for pricing Asian call options with average strike.

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