

The Implicit - Explicit (IMEX) Method for Pricing Options under Stochastic Volatility models with Jumps

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An analytical solution of some pricing options is very complicated or impossible. Therefore, their numerical solution is one of the most important issues in computational finance mathematics. One of the numerical methods is the finite difference method, that is performed by the discretization of the equations discussed which is divided into Implicit and Explicit categories. In this research, is considered a bargain price option under the Bates model, that is a stochastic volatility model with jump. and the partial integro-differential equation is solved by Crank Nicolson - Adams Bashforth Implicit-Explicit method. Then, the stability of the method is examined on the model under discussion. **Keywords:** Option pricing ; Stochastic volatility model ; Jump-diffusion model ; Finite difference method ; Implicit-Explicit ; Crank-Nicolson ; Adams-Bashforth ; Stability.

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