

A Novel Monte-Carlo Method for Pricing Options under the Heston-Hull-White Jump Diffusion Model

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Abstract: In this paper, we discuss a highly efficient Monte-Carlo method for pricing options under the hybrid 3-dimensional Heston-Hull-White jump diffusion model. Exotic features, such as early exercise and barrier, are considered. The pricing method is based on a dimensionality reduction MC approach built upon (i) the conditional MC techniques, and (ii) a derivation of the closed-form solutions of the conditional Partial Differential Equations (PDEs) via the Fourier transform. Numerical results illustrating the efficiency of the method are presented.

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