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Intervals for option prices *

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Abstract

An important aspect of the stock price process, which has often been ignored in the financial literature, is that prices on organized exchanges are restricted to lie on a grid. We consider continuous-time models for the stock price process with random waiting times of jumps and discrete jump size. We consider a class of pure jump processes that are "close" to the Black-Scholes model in the sense that as the jump size goes to zero, the jump model converges to geometric Brownian motion. We study the changes in pricing caused by discretization. Upper and lower bounds on option prices are developed. We study the performance of these intervals with real data.

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