

## **A Generalization of Option Pricing with Discrete Dividends to Markets with Daily Price Limits**

**Authors :** Jiahau Guo, Yihe Zhang

**Abstract :** This paper proposes solutions for pricing options on stocks paying discrete dividends in markets with daily price limits. We first extend the intraday density function of Guo and Chang (2020) to a multi-day one and use the framework of Haug et al. (2003) to value European options on stocks paying discrete dividends. Next, we adopt the fast Fourier transform (FFT) to derive accurate and efficient formulae for American options and further employ the three-point Richardson extrapolation to accelerate the computation. Finally, the accuracy of our proposed methods is verified by simulations.

**Keywords :** daily price limit, discrete dividend, early exercise, fast Fourier transform, multi-day density function, Richardson extrapolation

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