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Pricing Path-Dependent Options with Jump Risk via Laplace Transforms

[Steven Kou](#)¹⁾, [Giovanni Petrella](#)²⁾ and [Hui Wang](#)³⁾

1) Department of IEOR, Columbia University

2) Department of IEOR, Columbia University

3) Division of Applied Mathematics, Brown University

Abstract: We present analytical solutions for two-dimensional Laplace transforms of barrier option prices, as well as an approximation based on Laplace transforms for the prices of finite-time horizon American options, under a double exponential jump diffusion model. Our numerical results indicate that the method is fast, accurate, and easy to implement without requiring high precision calculations in Laplace inversion.

Keywords: [jump diffusion](#); [American options](#); [barrier and lookback options](#)

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