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# Pricing double barrier options using Laplace transforms

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## Abstract.

In this paper we address the pricing of double barrier options. To derive the density function of the first-hit times of the barriers, we analytically invert the Laplace transform by contour integration. With these barrier densities, we derive pricing formulæ for new types of barrier options: knock-out barrier options which pay a rebate when either one of the barriers is hit. Furthermore we discuss more complicated types of barrier options like double knock-in options.

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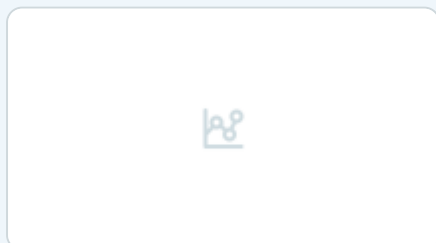
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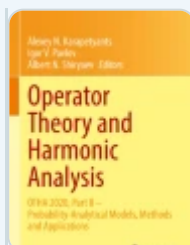
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## Author information

### Authors and Affiliations

**ABN-Amro Bank, Structured Products Group (AA 4410), P.O.Box 283 1000 EA Amsterdam, The Netherlands (Tel: (31)20-628 7028, Fax: (31)20-691 1705) , , , , , , NL**

Antoon Pelsser

## Additional information

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