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# Pricing double barrier options using Laplace transforms

| Published: January 2000

| Volume 4, pages 95–104, (2000) [Cite this article](#)[Finance and Stochastics](#)[Aims and scope](#) →[Submit manuscript](#) →[Antoon Pelsser](#)<sup>1</sup> **798** Accesses **90** Citations [Explore all metrics](#) →

## 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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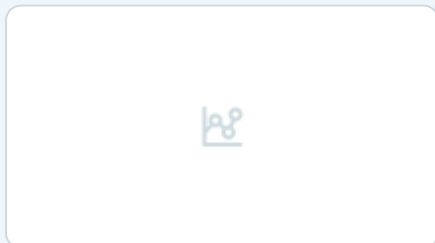
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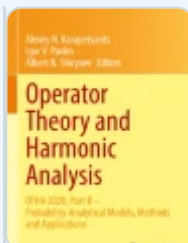
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## Additional information

Manuscript received: August 1997; final version received: October 1998

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### Cite this article

Pelsser, A. Pricing double barrier options using Laplace transforms. *Finance Stochast* **4**, 95–104 (2000).  
<https://doi.org/10.1007/s007800050005>

Issue Date

January 2000

DOI

<https://doi.org/10.1007/s007800050005>

**Key words:** [Option pricing](#), [Laplace transform](#), [contour integration](#)

**JEL Classification:** [G13](#)

**Mathematics Subject Classification (1991):** [44A10](#), [35K05](#)

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