

Title:

**Fast and Accurate Valuation of American Barrier Options**

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Abstract:

This article presents a new numerical method to compute the prices and early exercise boundaries of American barrier options. Numerical results obtained by this method show that after a change of variables, the exercise boundaries are well approximated by certain piecewise linear functions, leading to two fast and accurate methods to compute exercise boundaries, prices and hedge parameters. Comparison with other competing methods is also included.