A Radial Point Interpolation Method for Pricing Options on a Dividend Paying Asset

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Abstract

We present the radial point interpolation method (RPIM) to solve problems for pricing American and European put options on a dividend paying asset. Using RPIM, we get a system of ordinary differential equations which is then solved by a time integration methods. To resolve the difficulties associated with solving the free boundary problem associated with American options, we use a penalty approach. Numerical experiments are presented which prove the computational efficiency of the RPIM.

References

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Black-Scholes equation pricing stock options with discrete dividend, Mathematical and Computer Modelling, 44, 1058-1068.


Index Terms

Computer Science Information Systems

Keywords

European put options, American put options, dividend paying, radial point interpolation method