CONSTRUCTION OF ANALYTICAL SOLUTIONS TO THE BLACK-SCHOLES OPTION VALUATION MODEL BY MEANS OF HE'S POLYNOMIALS TECHNIQUE[*]

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Abstract:

In this paper, a semi-analytical method referred to as He's Polynomials Technique (HPT) is proposed for solving the classical Black-Scholes pricing model with stock as the underlying asset. The proposed method gives the exact solution of the solved problem in a very simple and quick manner even with less computational work while still maintaining high level of accuracy. Hence, we recommend an extension and adoption of this method for solving problems arising in other areas of financial engineering, finance, and applied sciences.

Keywords:

- Analytical solutions
- Black-Scholes model
- He's polynomials
- stock option valuation

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