A note on Black-Scholes pricing model for theoretical values of stock options

S. O. Edeki, O. O. Ugbebor, and E. A. Owoloko

Citation: AIP Conference Proceedings **1705**, 020040 (2016); doi: 10.1063/1.4940288
View online: http://dx.doi.org/10.1063/1.4940288
View Table of Contents: http://scitation.aip.org/content/aip/proceeding/aipcp/1705?ver=pdfcov
Published by the AIP Publishing

A Note on Black-Scholes Pricing Model for Theoretical Values of Stock Options

S.O. Edeki[1,a)], O.O. Ugbebor[2,1],and E.A. Owoloko[1]

[1]Department of Mathematics, Covenant University, Canaanland, Otta, Nigeria
[2,1]Department of Mathematics, University of Ibadan, Ibadan, Nigeria

[a)]Corresponding Author's e-mail: soedeki@yahoo.com , sunday.edeki@covenantuniversity.edu.ng

Abstract.In this paper, we consider some conditions that transform the classical Black-Scholes Model for stock options valuation from its partial differential equation (PDE) form to an equivalent ordinary differential equation (ODE) form. In addition, we propose a relatively new semi-analytical method for the solution of the transformed Black-Scholes model. The obtained solutions via this method can be used to find the theoretical values of the stock options in relation to their fair prices. In considering the reliability and efficiency of the models, we test some cases and the results are in good agreement with the exact solution.