

Mathematical Model In Finance

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Abstract:

The purpose of this talk is to outline some basic financial problems that can be tackled by mathematical methods, for this important the applications of ordinary and stochastic differential equations (ODEs and SEDs) in the finance will be described. Then, the stock and derivative markets will be modeled by using the SDE and PDE. Finally, by using effective numerical methods and using the Matlab programming the mentioned models are solved. This talk is also meant as a reference to those unfamiliar with financial problems. In fact, there are (at least) two different potential users of this talk:

- Students in finance wishing an introduction to numerical methods.
- Students in a quantitative discipline (such as mathematics, engineering, or computer science) who would like to see how their skills may come handy when dealing with finance.

Key Words

Black and Scholes Model, ODE, SDE, Ito Lemma, Brownian motion, Mathematical finance, MATLAB

References:

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