Department of Applied Mathematics and Statistics
The Johns Hopkins University

SEMINAR

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February 21, 2008
304 Whitehead Hall
Refreshments: 3:30 p.m.
Seminar: 4:00 p.m.

PORTFOLIO OPTIMIZATION UNDER STOCHASTIC VOLATILITY

Abstract

We extend Merton's classical portfolio optimization problem by requiring the price process of the risky asset to follow a stochastic volatility model, and assume that the portfolio manager has only discrete access to the continuous-time asset prices. The solution uses a new type of particle-filtering Monte-Carlo-type algorithm implemented forward in time in the case of power utility. We propose to study this forward behavior in relation to the novel idea of "forward performance." We further conjecture the existence of an optimal trading frequency in the presence of proportional transaction costs.