COLLOQUIUM

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The Student Subordinator Model with Dependence for Risky Asset Returns

Tuesday, February 22, 2011
A405 Wells Hall
10:20 a.m. - 11:10 a.m.
Refreshments: 10:00 a.m.

Abstract

A tractable model of the stock price is discussed. The model is driven by a Brownian motion, which has a 'fractal clock' rather than a calendar clock. We present a construction of the fractal activity time that leads to a t-distribution of the returns and short- or long-range dependence of returns, and asymptotic self-similarity of the activity time. Asymptotic distributions of the empirical characteristic function of the returns under short- and long-range dependence are obtained. We also present a formula for the price of a European call option, and illustrate the performance of the pricing formula using real financial data.

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