

FIRN Visitor Programme

**FIRN and the Quantitative Finance Research Centre at UTS are
pleased to announce a seminar**

Stochastic Volatility for Lévy Processes

Conducted by

Professor Dilip Madan
University of Maryland, USA

Abstract

Three processes reflecting persistence of volatility are initially formulated by evaluating three Lévy processes at a time change given by the integral of a mean reverting square root process. The model for the mean reverting time change is then generalized to include Non-Gaussian models that are solutions to OU (Ornstein-Uhlenbeck) equations driven by one sided discontinuous Lévy processes permitting correlation with the stock. Positive stock price processes are obtained by exponentiating and mean correcting these processes, or alternatively by stochastically exponentiating these processes. The characteristic functions for the log price can be used to yield option prices via the fast Fourier transform. In general, mean corrected exponentiation performs better than employing the stochastic exponential. It is observed that the mean corrected exponential model is not a martingale in the filtration in which it is originally defined. This leads us to formulate and investigate the important property of martingale marginals where we seek martingales in altered filtrations consistent with the one dimensional marginal distributions of the level of the process at each future date.

Date and Time

09 October 2007
4:00 to 6:00 pm

Location

University of Technology, Sydney
Seminar Room
Level 3, D Block, Room 3.01
1 - 59 Quay Street, Haymarket

Please RSVP to Michelle Manion on gfrc@uts.edu.au or call 9514 7735.