

THE CHINESE UNIVERSITY OF HONG KONG

Department of Statistics

will present a seminar entitled

**How Frequently Does the Stock Price Jump? - An Analysis of
High-Frequency Data with Microstructure Noises.**

by

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on

**Tuesday, 28 November 2006
2:00 pm – 3:00 pm**

in

**Lady Shaw Building C4
The Chinese University of Hong Kong**

Abstract:

The stock price is assumed to follow a jump-diffusion process which may exhibit time-varying volatilities. An econometric technique is then developed for this model and applied to high-frequency time series of stock prices that are subject to microstructure noises. Our method is based on first devising a localized particle filter and then employing fixed-lag smoothing in the Monte Carlo EM algorithm to perform the maximum likelihood estimation and inference. Using the intra-day IBM stock prices in 2004, we find that high-frequency data are crucial to disentangling frequent small jumps from infrequent large jumps. During the trading sessions, jumps are found to be frequent but small in magnitude, which is in sharp contrast to infrequent but large jumps when the market is closed. We also find that at the 5- or 10-minute sampling frequency, the conclusion will critically depend on whether heavy-tailed microstructure noises have been accounted for. Ignoring microstructure noises can, for example, lead to 50% or more overestimation of the jump intensity.

All are Welcome