THE UNIVERSITY OF GEORGIA

DEPARTMENT OF STATISTICS

FRANKLIN COLLEGE OF ARTS AND SCIENCES

The University of Georgia
Department of Statistics

Colloquium Series

Samuel Kou
Department of Statistics
Harvard University

"Multi-resolution inference of stochastic models from partially observed data"

Stochastic models, diffusion models in particular, are widely used in science, engineering and economics. Inferring the parameter values from data is often complicated by the fact that the underlying stochastic processes are only partially observed. Examples include inference of discretely observed diffusion processes, stochastic volatility models, and double stochastic Poisson (Cox) processes. Likelihood based inference faces the difficulty that the likelihood is usually not available even numerically. Conventional approach discretizes the stochastic model to approximate the likelihood. In order to have desirable accuracy, one has to use highly dense discretization. However, dense discretization usually imposes unbearable computation burden. In this talk we will introduce the framework of Bayesian multiresolution inference to address this difficulty. By working on different resolution (discretization) levels simultaneously and by letting the resolutions talk to each other, we substantially improve not only the computational efficiency, but also the estimation accuracy. We will illustrate the strength of the multi-resolution approach by examples.

Tuesday, March 29th, 2011

3:30 PM at 306 Statistics Building

Refreshments immediately following talk in The Cohen Room, room 230, Statistics Building

For more information, please contact:
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