

Colloquium announcement

“Modeling Inter-event Financial Durations using Martingale Estimating Functions”

Presented by
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Thursday, April 27, 2017
300 Seitz Hall
3:30 p.m.

Abstract: Accurate modeling of patterns in inter-event durations is of considerable interest in high-frequency financial data analysis. The class of logarithmic autoregressive conditional duration (Log ACD) models provides a rich framework for analyzing durations, and recent research is focused on developing fast and accurate methods for fitting these models to long time series of durations under least restrictive assumptions. This talk describes a semi-parametric modeling approach using Godambe-Durbin martingale estimating functions. This approach has wide applicability to several classes of linear and nonlinear time series. It only requires assumptions on the first few conditional moments of the process and does not require specification of its probability distribution. We introduce three approaches for parameter estimation in our methodology: solution of nonlinear estimating equations, recursive formulas for the vector-valued parameter estimates, and iterated component-wise scalar recursions. Effective starting values from an approximating time series model increase the accuracy of the final estimates. We demonstrate our approach via a simulation study and a real data illustration based on high-frequency transaction level data on several stocks. This is joint work with Yaohua Zhang (UConn), Jian Zou (WPI), and A. Thavaneswaran, (U. Manitoba).

Hosted by the
Department of Statistics
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Please join us after the colloquium for refreshments at
Top of the Stairs (217 College Ave.)