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STATISTICS COLLOQUIUM

MONDAY, SEPTEMBER 8, 2014

TALK: 4:15 PM — SCIENCE CENTER RM. 705

RECEPTION: 3:50 PM — SCIENCE CENTER, 7TH FLOOR

**“Low Latency Financial Data: Continuous Time Analysis of
Fleeting Discrete Price Moves”**

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ABSTRACT

Computer based automated trading dominates many of the most important financial markets. Extracting information from the order and trading flow from such markets is important for trading at high frequency, for policy, regulation and forensic finance. What is distinctive about this area is that the policy, the regulation, the policing and the trading focus is often on the very short term, frequently over time intervals which may be much less than a second. At very short time scales, for most important markets, such low latency data is dominated by three essential aspects: (i) prices are crucially discrete, due to the market's tick structure, (ii) prices change in continuous time, (iii) a high proportion of price changes are fleeting, reversed in a fraction of a second. But the econometricians cupboard is practically bare, for there are nearly no models or techniques which focus on all of these features, putting the role of the impact of time at center stage. In this paper we develop a novel continuous time framework which captures these types of low latency environments in an analytically tractable, semi-parametric manner where the role of calendar time is straightforward to calculate.