

STATISTICS COLLOQUIUM

FRIDAY, MAY 11, 2007

TALK: 4:00 PM — SCIENCE CENTER RM. 705

RECEPTION: 5:15 PM — SCIENCE CENTER, 7TH FLOOR

“Inferring Hidden Network Structure Dynamics in Hedge Fund Returns”

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ABSTRACT

Systemic risk describes the likelihood of the collapse of a financial system, such as a market crash or a breakdown of the banking system. In the wake of the recent growth of hedge funds, understanding joint dynamics of hedge fund returns becomes central in gauging the systemic risk. Embedding a social network model in a hierarchical Bayesian modeling framework, the paper explores an alternative way of characterizing the risk of hedge fund returns whose correlation dynamics are difficult to capture within standard econometric time series models. The proposed approach allows us to map hedge fund returns on an easy-to-interpret structure, to identify a few funds that may be more influential than others, and to reduce a high-dimensional volatility estimation problem into a low-dimensional one.