

STATISTICS COLLOQUIUM

MONDAY, OCTOBER 25, 2010

TALK: 4:00 PM — SCIENCE CENTER RM. 309

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

“A point process model for repeated interactions with applications to email traffic analysis”

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ABSTRACT

Data derived from repeated interactions between entities are becoming more common, the canonical examples being communication networks. We model the interactions as a point process---specifically using a Cox multiplicative intensity model---to adjust for reciprocation effects and obtain accurate estimates of group-level social behavior. We prove that the estimation procedure is asymptotically consistent as the time increases. We also prove that improper handling of interactions between more than two individuals leads to bias in the estimates, and we show how to correct this bias. Our motivating example is estimating gender-level preferences in a corporate email network.