

STATISTICS COLLOQUIUM

FRIDAY, JANUARY 24, 2014

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

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

“Computation, Communication, and Privacy Constraints on Statistical Estimation”

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ABSTRACT

How do we integrate practical considerations---such as computation, privacy, or communication---into a rigorous theory of estimation? In this talk, I discuss bringing these criteria in as constraints in a minimax analysis of estimation, combining classical decision-theoretic ideas with techniques from optimization and information theory to understand the fundamental difficulties of the problems. By developing procedures that attain these lower bounds, we obtain estimators that trade against a variety of criteria for performance. I will conclude with real-world applications and examples in which our procedures exhibit good practical performance.

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