APPLIED MATHEMATICS COLLOQUIUM

CONVEX ROBUST OPTIMIZATION:
AN OVERVIEW

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ABSTRACT:

The data in real-life optimization problems usually are uncertain - not known exactly when the problem is to be solved. Examples demonstrate that even small data uncertainty can make the optimal solution yielded by the "nominal" data heavily infeasible and thus - practically meaningless. Robust Optimization methodology proposed in mid-90's and rapidly developing since then is aimed at building robust optimal solutions -- those remaining feasible for all realizations of the data from a given uncertainty set and optimizing under this restriction a given objective function.

In the talk, we outline the basic concepts of RO in the context of "well-structured" convex optimization problems (Linear, Conic Quadratic and Semidefinite Programming), with emphasis on the central issue of computational tractability/building tight tractable approximations of the robust counterparts of uncertain problems.

We intend also to discuss recent links between RO and Chance Constrained Stochastic Programming, a more traditional way to handle data uncertainty in Optimization.

MONDAY, APRIL 2, 2007
4:30 PM
Building 2, Room 105

Refreshments at 4:00 PM in Building 4, Room 174
(Math Majors Lounge)

Applied Math Colloquium: http://www-math.mit.edu/amc/spring07
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