APPLIED MATHEMATICS COLLOQUIUM

GLOBAL OPTIMIZATION WITH BRANCH-AND-REDUCE

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ABSTRACT:

We describe the theoretical and algorithmic foundations of the branch-and-reduce approach to the global optimization of continuous, integer, and mixed-integer nonlinear programs. These include: a theory of convex extensions for the construction of closed form expressions of convex envelopes of nonlinear functions, an entirely linear-programming-based approach to global optimization, a theory of domain reduction, and proofs of finiteness for certain branching schemes. Applications from a variety of application areas will be reviewed and computational results with BARON will be reported.

MONDAY, OCTOBER 1, 2007
4:30 PM
Building 4, Room 270

Reception at 4:00 PM in Building 4, Room174
(Math Majors Lounge)

Applied Math Colloquium: http://www-math.mit.edu/amc/fall07
Math Department: http://www-math.mit.edu

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