Temple University Mathematics Colloquium

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will speak on

Trust Regions in Large-Scale Optimization and Regularization

ABSTRACT: Trust Regions yield efficient methods in optimization and in the regularization of discrete forms of ill-posed problems. The main calculation required by these methods is the solution of the so-called Trust-Region Subproblem (TRS):

$$\min \ \tfrac{1}{2}x^T H x + g^T x \quad s.t. \quad \|x\|_2 \leq \Delta$$

where H is an $n \times n$ real, symmetric matrix, g is an n-dimensional, real, non-zero vector, and $\Delta > 0$.

We describe the TRS, its properties and solution strategies. We discuss and compare state-of-the-art methods for the large-scale TRS and present applications from large-scale inverse problems.

Monday, 6 October 2008
Lecture at 4:00 pm
Coffee, tea, and refreshments from 3-5 pm
Room 617, Wachman Building
Department of Mathematics