THE UNIVERSITY OF CHICAGO | THE COMMITTEE ON COMPUTATIONAL AND APPLIED MATHEMATICS

COLLOQUIUM

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Iterative Random Sparsification and Convergence of a Fast Randomized Jacobi Iteration

TUESDAY, June 6th, at 4:00 PM
Jones 303, 5747 S. Ellis Ave. Chicago, IL 60637

ABSTRACT

The traditional methods of numerical linear algebra are prohibitively expensive for high-dimensional problems for which even a single matrix multiplication by a dense vector may be too costly. In this talk I will discuss a general framework for reducing the cost of classical iterative numerical linear algebra schemes by randomly sparsifying the approximate solution at each iteration. In the specific case of Jacobi iteration I will provide a thorough characterization of the randomized scheme's error properties.

The talk is based on joint work with Tim Berkelbach, Sam Greene, Lek-Heng Lim, James Smith, and Rob Webber.

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