

Department of Mathematics

University of Houston

Scientific Computing Seminar

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Low-rank matrices in numerical analysis and optimization problems

Thursday, Feb. 20, 2014

1:30 PM- 2:30 PM

Room 646 PGH

Abstract:

The main problem with data arrays in many dimensions is that we cannot use them to represent the data in numerical algorithms. Structure and generators become the key issue, and make the construction of algorithms to be kin to many works on structured matrices. The choice of generators is crucial for solving optimization and approximation problems.

We consider how matrix approximation results transform into efficient optimization techniques for multi-index arrays with the tensor-train generators and virtual dimensions. A new approach based on the Tensor-Train-CROSS algorithm will be presented for the global optimization task arising in the docking problem.

This seminar is easily accessible to persons with disabilities. For more information or for assistance, please contact the Mathematics Department at 743-3500.