



"Optimization of Multi-Length Scale Structured Matrix Computations"

Friday September 28, 2:30 pm
Pickard Hall, Room 304

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Abstract:

The challenges of the advancement of multiscale modeling and simulation to matrix computations have not been widely addressed. Most linear algebra solvers are not designed in ways that are robust and efficient for underlying multi-length scale structured matrices. In this talk, we present a self-adapting block cyclic reduction technique which is numerically stable and robust for the range of multi-length scale parameters of the underlying physical simulations. The new solver is more than an order of magnitude faster than the conventional techniques.

This is a joint work with Wenbin Chen, Richard Scalettar and Ichitaro Yamazaki

The Math Department will provide refreshments 30 min. prior to the presentation.