Structured Preconditioners in Adaptive Optics Imaging

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Imaging systems based on adaptive optics technology attempt to determine and remove phase errors in a measured wavefront. This process requires incorporating regularization, and solving an associated large scale least squares problem involving Kronecker products. Approaches to solve this problem typically use an iterative approach, such as LSQR.

In this talk we describe an efficient preconditioning scheme based on exploiting the Kronecker product structure. Numerical experiments show the effectiveness of the preconditioner.

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