Michele Benzi

The HSS Preconditioner for Saddle Point Problems:
Theory, Numerical Experiments, Applications

Department of Mathematics and Computer Science
Emory University
400 Dowman Drive
Atlanta
GA 30322
benzi@mathcs.emory.edu

In this talk we will report recent results on the use of the Hermitian/skew-Hermitian Splitting (HSS) preconditioner for generalized saddle point problems. Theoretical results on the spectral properties of preconditioned matrices, including sharp bounds on the eigenvalues and conditions for a real spectrum, will be highlighted (joint work with Gene Golub and with Valeria Simoncini).

Numerical results on fluid flow problems and from a novel application in image processing (weighted Toeplitz least squares) will be given (joint work with Jia Liu and Michael Ng).