

THE UNIVERSITY



OF HONG KONG

Department of Mathematics

Numerical Mathematics and Applied Analysis Group Seminar (NMAA)

Preconditioning Analysis for Weighted Toeplitz Regularized Least Squares Problems

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on Tuesday, March 21, 2006 at 4:00p.m.
in Room 309, Run Run Shaw Building, HKU

Abstract

We consider the iterative solutions of weighted Toeplitz regularized least squares (WTRLS) problems. Our approach is based on an augmented system formulation which leads to solving a 3-by-3 block system. To solve this problem, we focus our attention on two types of preconditioners for tackling 2-by-2 block system: constraint preconditioner and the Hermitian and skew-Hermitian splitting (HSS) preconditioner. Numerical results are presented to illustrate and analyze the performance and limitations of the preconditioners with explanations based on some existing theoretical results. Although the analysis here is for WTRLS problems, it applies also to problems with similar preconditioning techniques in a more general context.

Remark: This talk is a pre-play by the speaker for the Tenth Copper Mountain Conference on Iterative Methods on 3rd April, 2006.

All are welcome
