THE UNIVERSITY   **OF HONG KONG**

Department of Mathematics

Numerical Mathematics and Applied Analysis Group Seminar (NMAA)

Solving linear systems: from the basics to Hermitian and skew-Hermitian splitting (HSS) preconditioners

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on Tuesday, May 30, 2006
in Room 517, Meng Wah Complex, HKU

Lecture 1:	Introduction to solving linear systems	2:00 – 3:00pm
Lecture 2:	Spectral analysis of HSS preconditioners	3:15 – 4:00pm

Abstract

Solving linear systems is one of the most important mathematical problems that appear in real-life applications. One main topic of numerical linear algebra is to study how to solve linear systems practically and efficiently.

In the first lecture, we shall go over some basics in solving linear systems. The ideas of direct methods, iterative methods and preconditionings will be introduced. Examples which will be used to illustrate these solving techniques include Toeplitz systems and saddle point problems. This part of the talk particularly welcomes those who do not know much about this area and serves as a preparation for the following part as well.

In the second lecture, we shall study how Hermitian and skew-Hermitian splitting (HSS) preconditioners can be applied on solving saddle point problems. Previously known results and speaker's work on the spectral analysis of HSS preconditioned systems will be presented.

All are welcome