

Preface

We are pleased to publish in this issue of Journal of Computational Mathematics the 9 papers presented at the Summer Workshop on Numerical Linear Algebra at The University of Hong Kong on 28 August 2005. The main theme of this meeting is *Numerical Linear Algebra*, and the papers involved in this issue cover this theme.

The main contents of the first 9 papers in this issue are briefly described as follows:

Z. Bai and Y. Gao constructed a modified Bernoulli iteration method for solving the quadratic matrix equation, showed the local linear convergence of the new method.

G. Gu et al. studied the numerical solution of the large nonsymmetric linear shifted system for many different values of the shift in a wide range, and developed flexible preconditioning technique to the solution of the shifted systems.

Z. Jia and Y. Sun studied the Sylvester equation and developed a numerically stable QR decomposition based algorithm for the equation.

A. Liao and Y. Lei studied the least-square symmetric solution set of a matrix equation and gave a new feasible method based on the projection theorem, the generalized SVD and the canonical correction decomposition to find the optimal matrix solution.

W. Li and X. Chen studied the theoretical analysis for the Rayleigh quotient matrix and improved the existing bounds.

L. Lu and Y. Lin studied the structure of circulant inverse M-matrices and derived several important properties.

Y. Wei et al. investigated the condition numbers for the generalized matrix inversion and the rank deficient linear least squares problem.

Y. Wu and A. Yang proposed a kind of semi-implicit schemes of incremental unknowns type for heat equation with time-dependent coefficients and studied the stability of the new scheme.

Z. Zhang et al. proposed a quadratically convergent algorithm for computing the invariant subspaces of an Hermitian matrix and presented an accurate convergence analysis of the algorithm.

The success of the meetings should be credited to the enthusiastic participation of the attendees, as well as the financial supports of the Croucher Foundation and the K.C. Wong Education Foundation.

The guest editors thank all who contributed to the special issue. Special thanks are conveyed to the reviewers for their constructive suggestions and useful comments following their evaluation of the papers. The guest editors are also very much indebted to Professor Shi Zhong-ci, the Editor in Chief of the Journal of Computational Mathematics for providing the opportunity to edit the timely special issue for the Summer Workshop on Numerical Linear Algebra.

Raymond Chan, The Chinese University of Hong Kong
Wai-Ki Ching, The University of Hong Kong (Guest Editor)
Michael Ng, Hong Kong Baptist University (Guest Editor)