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Preface for LAA special issue on structured matrices (SM)

The Second International Conference on Structured Matrices was held from June 8 to June 11, 2006 at Hong Kong Baptist University. It was a sequel to a similar conference held in Hong Kong (2002). The conference had two major objectives: (1) to improve the dialogue and collaboration between matrix theoreticians and computational scientists; and (2) to reduce the gap between researchers working on the fundamentals and researchers working on real-life applications, with the aim in mind that emerging applications stimulate new theoretical research and that better theoretical tools in turn can be exported back to various fields of application.

The special issue contains 18 papers from invited speakers of the conference. The contributions cover different aspects in the research field of structured matrices with applications. Three main research topics are involved in the issue:

- (i) the theoretical analysis of structured matrices including algebraic, analytic and spectral properties;
- (ii) the design of efficient algorithms depending on the properties of structured matrices and the effective preconditioning techniques for structured matrices;
- (iii) the applications to signal and image processing, and partial differential equations.

On behalf of the organizers of the conference, we would like to thank Richard A. Brualdi, Volker Mehrmann and Hans Schneider, Editors-in-Chief of Linear Algebra and Its Applications, for devoting a special issue of the journal to the Second International Conference on Structured Matrices, 2006. We would also like to thank the following sponsors for their generous support: Lee Hysan Foundation, Hong Kong Baptist University, Centre for Mathematical Imaging and Vision (HKBU), Hung Hing Ying Physical Sciences Research Fund and Hong Kong Mathematical Society.

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