



# IMAGE



Serving the International Linear Algebra Community

**Issue Number 31, pp. 1-44, October 2003**

*Editor-in-Chief:* Bryan L. Shader  
 bshader@uwyo.edu  
 Department of Mathematics  
 University of Wyoming  
 Laramie, WY 82071, USA

*Editor-in-Chief:* Hans Joachim Werner  
 werner@united.econ.uni-bonn.de  
 Department of Statistics  
 Faculty of Economics, University of Bonn  
 Adenauerallee 24-42, D-53113 Bonn, Germany

*Associate Editors:* Jerzy K. Baksalary, Oskar Maria Baksalary, S.W. Drury, Stephen J. Kirkland, Steven J. Leon,  
 Chi-Kwong Li, Simo Puntanen, Peter Šemrl & Fuzhen Zhang. *Editorial Assistant:* Jeanette Reisenburg.

*Editors-in-Chief:* Robert C. Thompson (1988); Jane M. Day & R.C. Thompson (1989);  
 Steven J. Leon & R.C. Thompson (1989-1993); Steven J. Leon (1993-1994); Steven J. Leon & George P.H. Styan (1994-1997);  
 George P.H. Styan (1997-2000), George P.H. Styan & Hans J. Werner (2000-2003).

SIAG LA Prize Winners Speed up the QR Algorithm (Nicholas J. Higham).....	2
Research Experiences with Undergraduates (Chi-Kwong Li).....	3
The Eighth SIAM Conference on Applied Linear Algebra (Roy Mathias & Hugo Woerdeman) .....	9
The Twelfth International Workshop on Matrices and Statistics (Hans Joachim Werner) .....	9
John William Strutt and the Rayleigh Quotient (Richard William Farebrother) .....	11
Review of <i>Developments and Applications of Block Toeplitz Iterative Solvers</i> (Yimin Wei) .....	12
Math Books Published in 2003 .....	12

### Forthcoming Conferences and Workshops in Linear Algebra and Matrix Theory

9-10 January 2004: The SVG Meeting: A Celebration .....	15
27-28 February 2004: The SIAM Workshop on Combinatorial Scientific Computing (CSC04).....	15
6-8 May 2004: Directions in Combinatorial Matrix Theory .....	15
26 May-2 June 2004: International Algebraic Conference .....	16
19-22 July 2004: Eleventh ILAS Conference .....	16
18-21 August 2004: The Thirteenth International Workshop on Matrices and Statistics .....	17
23-27 August 2004: COMPSTAT 2004 .....	17
23-26 May 2005: Gini-Lorenz Conference.....	19

### IMAGE Problem Corner: Old Problems, Many with Solutions

28-3: Ranks of Nonzero Linear Combinations of Certain Matrices .....	23
29-3: Isometric Realization of a Finite Metric Space .....	23
29-4: Normal Matrix and a Commutator .....	24
29-11: The Minimal Rank of a Block Matrix with Generalized Inverses.....	25
30-1: Star Partial Ordering, Left-star Partial Ordering, and Commutativity .....	29
30-2: Class of (0,1)-Matrices Containing Constant Column-Sum Submatrices.....	33
30-3: Singularity of a Toeplitz Matrix .....	35
30-4: The Similarity of Two Block Matrices .....	35
30-5: A Range Equality for the Difference of Orthogonal Projectors .....	36
30-6: A Matrix Related to an Idempotent Matrix.....	39
30-7: A Condition for an Idempotent Matrix to be Hermitian .....	41

### IMAGE Problem Corner: New Problems .....