R.B. Bapat, S.J. Kirkland, K.M. Prasad, S. Puntanen (Eds.)

Combinatorial Matrix Theory and Generalized Inverses of Matrices

- **Delves into two very important contemporary areas in linear algebra, namely combinatorial matrix theory and generalized inverses**
- **Makes substantial advances in theory and application-oriented research in linear statistical inference**
- **Covers a wide range of topics of interest such as graph theory, linear algebra, numerical methods and statistical inference**

This book consists of eighteen articles in the area of `Combinatorial Matrix Theory' and `Generalized Inverses of Matrices'. Original research and expository articles presented in this publication are written by leading Mathematicians and Statisticians working in these areas. The articles contained herein are on the following general topics: `matrices in graph theory', `generalized inverses of matrices', `matrix methods in statistics' and `magic squares'. In the area of matrices and graphs, speci_c topics addressed in this volume include energy of graphs, q-analog, immanants of matrices and graph realization of product of adjacency matrices. Topics in the book from `Matrix Methods in Statistics' are, for example, the analysis of BLUE via eigenvalues of covariance matrix, copulas, error orthogonal model, and orthogonal projectors in the linear regression models. Moore-Penrose inverse of perturbed operators, reverse order law in the case of inde_nite inner product space, approximation numbers, condition numbers, idempotent matrices, semiring of nonnegative matrices, regular matrices over incline and partial order of matrices are the topics addressed under the area of theory of generalized inverses. In addition to the above traditional topics and a report on CMTGIM 2012 as an appendix, we have an article on old magic squares from India.

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