

Editors' Summary

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Editors' Summary for the Special Issue: Proceedings of the 24th International Workshop on Matrices and Statistics

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The 24th International Workshop on Matrices and Statistics was held over the period 25-28 May 2015 in Haikou, China. The program included six invited plenary speakers and four of them submitted papers to this Special issue. Professor Ravindra B. Bapat (Indian Statistical Institute, New Delhi, India) gave a talk on the “Moore-Penrose inverse of a Euclidean distance matrix” and this resulted in a joint paper with Professor Hiroshi Kurata. The International Linear Algebra Society sponsored Professor Karl Gustafson (University of Colorado, Boulder, CO, USA) as the ILAS Lecturer resulting in the paper “Anti-eigenvalue analysis, new applications: Continuum Mechanics, Economics, Number Theory”. Professor Yoshio Takane (University of Victoria, BC, Canada) gave a presentation on “Professor Haruo Yanai and multivariate analysis” resulting in a survey paper. Professor Mu-Fa Chen (Beijing Normal University, China) kindly accepted our invitation to present a Plenary talk and this is reproduced as “Unified speed estimation of various stabilities”.

The Workshop also had two Invited Special Sessions, one honoring Dr Simo Puntanen's 70th Birthday and the other Honoring Professor Kai-Tai Fang's 75th Birthday. We reproduce two of the talks from these sessions. In the first session Professor Stephen J. Haslett (Massey University, Palmerston North, New Zealand) gave a talk on “Positive semidefiniteness of estimated covariance matrices in linear models for sample survey data”. In the second session Professor Jianxin Pan (University of Manchester, UK) gave a talk on “Regularization of covariance structures”, which has been enhanced with contributions from Xiangzhao Cui, Chun Li, Jine Zhao, Li Zeng and Defei Zhang. Both these papers are contained in this special issue.

The Scientific Committee for the Workshop arranged eleven mini-symposia on special topics to bring together a numbers of researchers in cognate fields and thereby foster some interaction between the participants. While not all mini-symposia resulted in submissions to this special we have published a range of papers from four of the mini-symposia. We list the titles of the actual talks given in the mini-symposia at the Workshop.

Mini-symposium on “Magic Matrices”: Ziqi Lin (BNU-HKBU United International College, Zhuhai, China) on “Some results on classification of magic squares of order 5” resulting in the joint publication with Kai-Tai Fang and Yuhui Deng.

Mini-symposium on “Matrices in Applied Probability”: Quan-Lin Li (Yanshan University, Qinhuangdao, China) on “Nonlinear Markov processes in big networks”, and Jeffrey J. Hunter (Auckland University of Technology, New Zealand) on “The accurate computation of the key properties of Markov chains and Markov renewal processes”.

Mini-symposium on “Linear and Mixed Models”: Shuangzhe Liu (University of Canberra, Australia) on “Sensitivity analysis in linear models” resulting in the joint paper with Tiefeng Ma and Yonghui Liu. Also Yongge Tian (Central University of Finance and Economics, Beijing, China) on “A unified approach in BLUPs under linear mixed-effects model” resulting in the joint paper with Bo Jiang.

Mini-symposium on “Teaching Matrices within Statistics”: Mika Mattila (Tampere University of Technology, Finland) on “Studying the different properties of MIN and MAX matrices: a student-friendly approach” resulting in the joint publication with Pentti Haukkanen.

Besides the aforementioned special sessions there were five sessions devoted to contributed papers. From one of these sessions, the paper by Volha Olga Kushel, (Shanghai Jiao Tong University, China) “On a criterion of D-stability for P-matrices” has been accepted for publication.

One of the distinguishing features of the IWMS series of Workshops is the opportunity for researchers to be able to interact and collaborate. One such collaboration at this particular workshop resulted in the paper “Why the Kemeny Time is constant” by Karl Gustafson and Jeffrey Hunter, both of whom who have individual submissions in this issue. This paper, while not presented at the workshop, was as a direct result of a series of discussions initiated at the workshop.

The Guest Editor and the Associate Guest Editors, Simo Puntanen and Dietrich von Rosen, wish to express their appreciation to Professor Kai-Tai Fang and the Chair of the Local Organizing Committee of the Workshop, Professor Chuanzhong Chen, for their superb contributions to supporting and hosting the Workshop.

We are also grateful to the publishers and the Editor, Carlos Martins da Fonseca, of “Special Matrices” to be able to offer participants of the Workshop the opportunity to bring their works to the wider community. The Workshop did produce a Souvenir Booklet that contained a selection of extended abstracts of talks presented at the workshop, (see <http://iwms2015.csp.escience.cn/>). However the opportunity to have fully refereed papers, afforded by this special proceedings issue, was appreciated by those who submitted papers.

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Guest Editor