The 25th International Workshop on Matrices and Statistics (IWMS’2016) will be held on June 6-9, 2016 in the city of Funchal at the beautiful Madeira Island, the Pearl of the Atlantic.

The purpose of the workshop is to bring together researchers sharing an interest in a variety of aspects of statistics and its applications as well as matrix analysis and its applications to statistics, and offer them a possibility to discuss current developments in these subjects. The workshop will bridge the gap among statisticians, computer scientists and mathematicians in understanding each other’s tools. We anticipate that the workshop will stimulate research, in an informal setting, and foster the interaction of researchers in the interface between matrix theory and statistics.

Some emphasis will be put on related numerical linear algebra issues and numerical solution methods, relevant to problems arising in statistics.

The workshop will include invited talks given by

- Alan Agresti (USA)
- Rosemary A. Bailey (UK)
- Radosław Kala (Poland)
- Alexander Kovačev (Portugal)
- Jianxin Pan (UK)

as well as two special sessions:

- **Session devoted to the 75th birthday of Professor Jeffrey J. Hunter**
  Chair of this session is Peter G. Taylor (Australia) with invited talks from:
  - Jeffrey J. Hunter (New Zealand)
  - Tuğrul Dayar (Turkey)
  - Steve Kirkland (Canada)
  - Guy Latouche (Belgium)
  - Peter G. Taylor (Australia)

- **The Memorial Session of Ingram Olkin**
  Chair of this session is Hans Joachim Werner (Germany) with invited talks from:
  - Hans Joachim Werner (Germany)
  - Jeffrey J. Hunter (New Zealand)
  - Simo Puntanen (Finland)
  - Michael Greenacre (Spain): video
The following minisymposia devoted to cutting edge research topics will be held during the workshop:

- **Magic Squares, Prime Numbers and Postage Stamps**
  organized by Ka Lok Chu (Canada)
- **Multivariate Linear Models**
  organized by Katarzyna Filipak (Poland)
- **Inequalities in Matrix Theory and Probability**
  organized by Alexander Kovačević (Portugal)
- **Methods for Modelling Correlated and Complex Data**
  organized by Jianxin Pan (UK)
- **Estimation and Testing in Linear Models**
  organized by Roman Žmigrod (Poland)

**Committees and Organizers of IWMS’2016**

**The International Scientific Committee**

- Simo Puntanen (Finland) - Chair
- George P.H. Styan (Canada) - Honorary Chair
- Julia Volafová (USA) - Vice-Chair
- S. Ejaz Ahmed (Canada)
- Katarzyna Filipiak (Poland)
- Jeffrey J. Hunter (New Zealand)
- Augustyn Markiewicz (Poland)
- Dietrich von Rosen (Sweden)
- Hans Joachim Werner (Germany)

**The Organizing Committee**

- Francisco Carvalho (Portugal) - Chair
- Katarzyna Filipiak (Poland) - Vice-Chair
- Ana Maria Abreu (Portugal)
- Daniel Klein (Slovakia)

**Supported by:**

- CMA - Centro de Matemática e Aplicações (FCT, UNL)
- CIMA - Centro de Investigação em Matemática e Aplicações (UE)
- PSE - Produtos e Serviços de Estatística
- INE - Instituto Nacional de Estatística
- FLAD - Fundação Luso-Americana para o Desenvolvimento
- Delta Cafés
- Associação de Promoção da Madeira
Part II

Program
Program

Sunday, June 5, 2016

16:30 – 18:00 Welcome Drink at the Instituto do Vinho da Madeira

Monday, June 6, 2016

9:00 – 9:20 Registration

Plenary Session

9:20 – 9:30 Opening
9:30 – 10:10 J. Pan: Joint mean-covariance modelling and its R package: jmcm

Contributed Session I

10:20 – 10:40 P. Song: Method of divide-and-combine in regularized regression for Big Data
10:40 – 11:00 H. Drygas: Adding observations in regression analysis
11:00 – 11:20 K. Váňatová: Clusterwise regression using mixtures of regression models

11:20 – 11:40 Coffee Break

Minisymposium - Multivariate Linear Models

11:40 – 12:00 D. Klein: Testing mean under compound symmetry covariance setup
12:00 – 12:20 I. Žežula: Comparison of estimators in a multivariate linear model with generalized uniform correlation structure
12:20 – 12:40 M. Fonseca: Estimation for the growth curve model with orthogonal covariance structure

12:40 – 14:10 Lunch

Contributed Session II

14:10 – 14:30 A. Markiewicz: Optimal circular neighbor designs under mixed interference models
14:30 – 14:50 C. Francisco: Hadamard matrices on error detection and correction: Useful links to BIBD
Minisymposium - Estimation and Testing in Linear Models

15:00 – 15:20 J. T. Mexia: Normal approximations to noncentral Wishart matrices
15:20 – 15:40 J. S. Allison: Goodness-of-fit tests for semiparametric transformation models
15:40 – 16:00 L. Santana: Goodness-of-fit tests for semiparametric and parametric hypotheses based on the probability weighted empirical characteristic function

16:00 – 16:20 Coffee break

Minisymposium - Magic Squares, Prime Numbers and Postage Stamps

16:20 – 16:40 K. L. Chu: Se-tenant philatelic Machin-definitive blocks with selected total face-values, with special emphasis on the Royal Mail “Stamps for Cooks” Prestige Booklet
16:40 – 17:00 G. P. H. Styan: A sensational $7 \times 7$ pandiagonal magic square with non-consecutive entries and “diamond-square arrangement” matrices for knight’s tours in a pandiagonal magic carpet
17:00 – 17:20 K. L. Chu: Some comments on Margaret Kepner’s “Magic Square 25 Study” (2010)
17:20 – 17:40 G. P. H. Styan: Some comments on Sophie Germain prime numbers and on two philatelic magic-carpet dinner-placemats for the IWMS-2016 Madeira Magic Minisymposium

Tuesday, June 7, 2016

Plenary Session

9:30 – 10:10 A. Kovačev: The 123 theorem of probability theory and copositive matrices

Minisymposium - Methods for Modelling Correlated and Complex Data

10:20 – 10:40 T. Nummi: Analysis of multivariate growth curves with smoothing splines
10:40 – 11:00 L. Shi: Robust estimation in meta-regression analysis
11:00 – 11:20 I. Ngaruye: Small Area Estimation for multivariate repeated measures data
11:20 – 11:40 Coffee Break

**Minisymposium - Inequalities in Matrix Theory and Probability**

11:40 – 12:00 K. Castillo: *On some inequalities for eigenvalues of a special class of unitary matrices*

12:00 – 12:20 M. Mattila: *Defining positive definite arithmetical functions and a partial order on the set of arithmetical functions by using matrix inequalities*

12:20 – 12:40 F. R. Rafaeli: *Inequalities of zeros of classical orthogonal polynomials via Jacobi matrices*

12:40 – 14:10 Lunch

**Plenary Session**

14:10 – 14:50 R. Kala: *A new look at combining information from stratum submodels*

**Minisymposium - Estimation and Testing in Linear Models**

15:00 – 15:20 R. Zmyślony: *Application of Jordan algebra for statistical inference in multivariate normal models*

15:20 – 15:40 K. Filipiak: *Estimation of parameters under a generalized growth curve model*

15:40 – 16:00 F. Carvalho: *Best quadratic unbiased estimators for variance components in models with orthogonal block structure*

16:00 – 16:20 Coffee break

**Contributed Session III**

16:20 – 16:40 C. Santos: *On the extension of a balanced mixed model*

16:40 – 17:00 A. C. Carapito: *Lyapunov-Metzler inequalities with solutions sharing a common Schur complement*

17:00 - Poster Session

V. Kopčová: *Unbiased estimator using hypergeometric function*

I. Sousa-Ferreira: *Hybrid model for recurrent event data*
Wednesday, June 8, 2016

Plenary Session

9:30 – 10:10 A. Agresti: Some perspectives about generalized linear modeling

Contributed Session IV


Special Session - part A

Session devoted to the 75th birthday of Professor Jeffrey J. Hunter

10:40 – 11:20 J. J. Hunter: A fifty year journey with colleagues, generalized matrix inverses and applied probability

11:20 – 11:40 Coffee break

Contributed Session V

11:40 – 12:00 E. Fišerová: Conics and quadric surfaces fitting to correlated data
12:00 – 12:20 C. Dias: Inference with vec type operators
12:20 – 12:40 C. Nunes: Comparing for one-way fixed effects models the usual and the random sample sizes ANOVA

12:40 – 14:00 Lunch

Special Session - part B

Session devoted to the 75th birthday of Professor Jeffrey J. Hunter

14:00 – 14:30 T. Dayar: Representing probability vectors compactly
14:30 – 15:00 S. Kirkland: Kemeny’s constant and an analogue of Braess’ paradox for Markov chains
15:00 – 15:30 G. Latouche: The deviation matrix and quasi-birth-and-death processes
15:30 – 16:00 P. G. Taylor: The Markov-modulated Erlang Loss System

16:00 - EXCURSION

19:00 - Conference Dinner
Thursday, June 9, 2016

Plenary Session

9:30 – 10:10 R. A. Bailey: Association schemes in designed experiments

Contributed Session VI

10:20 – 10:40 D. Kokol Bukovek: Seeking for a joint pmf given the sum of the marginal distributions
10:40 – 11:00 C. Andrade: Statistical analysis in climate research: aridity conditions in the Iberian Peninsula - a case study
11:00 – 11:20 M. F. Teodoro: Modeling the caregivers knowledge about pediatric hypertensions

11:20 – 11:40 Coffee break

11:40 – Special Session

The Memorial Session of Ingram Olkin

13:00 – 14:10 Lunch

Contributed Session VII

14:10 – 14:30 A. Correia: Confirmatory factor analysis for Entrepreneurial Framework Conditions
14:30 – 14:50 R. Covas: Variance-covariance matrix estimation in double multivariate data with symmetric monotone missing values

14:50 – Closing