

18th International Workshop on Matrices and Statistics 2009

June 23 – 27, 2009, Smolenice Castle, Slovak Republic

***18th International Workshop on
Matrices and Statistics 2009***

Program and Abstracts



Smolenice Castle, Slovakia

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Smolenice Castle, Slovak Republic, June 23 – 27, 2009

Editors: Viktor Witkovský and Júlia Volaufová

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General Information

Conference

The 18th International Workshop on Matrices and Statistics, Smolenice Castle, Slovakia, June 23-27, 2009.

Endorsed by the International Linear Algebra Society

This is the next in a long-running series of Workshops with the purpose of stimulating exchanges of ideas and research at the interfaces of matrix theory, statistics, and stochastic processes.

International Organizing Committee

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

Local Organizing Committee

- Viktor Witkovský - Chair (Slovakia)
- Gejza Wimmer - Vice-Chair (Slovakia)
- Barbora Arendacká (Slovakia)
- Svorad Štolc Jr. (Slovakia)
- Katarina Cimermanová (Slovakia)
- Stanislav Katina (Slovakia)

Workshop Venue

Smolenice Castle - the Congress Centre of the Slovak Academy of Sciences.

Address of the Smolenice Castle:

Congress Centre of the SAS
Zámocká 18,
919 04 Smolenice, Slovak Republic
Phone: +421 33 5586 191-2,
Fax: +421 33 5586 193

Position of the Smolenice Castle:

LATITUDE: 48° 30' 50.05" N
LONGITUDE: 17° 25' 58.10" E
ELEVATION: 293 m



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General Information

Registration and Information Desk

Registration and Information Desk is located in the ground floor of the Smolenice Castle (near the main entrance). The desk will be open during following hours:

June 23	11:30 – 19:00
June 24 – 26	8:00 – 18:00 (with a lunch break)
June 27	8:00 – 13:00

Look for the actual information on the boards at the registration desk and at the entrance to the main lecture room.

Information for Presenters

Oral Presentations

- Oral presentations will take place in the lecture room at the first floor of the Castle.
- The pre-planned time is 40 minutes for an invited lecture and 20 minutes for a contributed presentation (including discussion).
- We recommend to prepare the presentations for an electronic presentation either as an Adobe Acrobat file or as a Microsoft PowerPoint presentation.
- Presenting authors should upload the files (available on CD or USB flash drive) at least 30 minutes before the beginning of the Session.
- Usage of your own computer for presentation is not possible.

Poster presentations

- Posters will be displayed at the lobby in the second floor, near the lecture room.
- The maximum allowable size of the Posters is 120 x 80 cm (length x width).
- The posters will be displayed from Tuesday till Friday.

Meals and Refreshments

Breakfasts, lunches and dinners will be served in the main dining room in the first floor, near the main castle staircase.

Breakfast	8:00 – 9:00
Lunch	12:00 – 13:00 (13:00 – 14:00 on Tuesday, June 23)
Dinner	19:00 – 20:00 (18:00 – 19:00 on Wednesday, June 24)

Refreshments during coffee breaks will be served in the lobby at the main lecture room in the first floor.

Individual refreshments can be purchased in the bar in front of the main dining room (opened each day till 21:30).

Social Programme

A Welcome Reception is planned for Tuesday, June 23 at 18:00-19:00, in Red Hall (Červený salónik) of the Castle.

Excursion to the Castle Červený Kameň is planned for Thursday, June 25 in the afternoon at 13:30.



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Additional social program for the accompanying persons includes Introducing the Smolenice Castle, Visit of traditional pottery producer in Modra, Visit of the Piešťany Spa, Walk through the Castle park and Molpir.

Departure from Smolenice

We kindly ask the participants to free their rooms on Saturday, June 27, till 9:00 (AM).

The conference bus from Smolenice Castle to Bratislava will depart on Saturday, June 27, 2009, shortly after the lunch, approximately at 13:00. The bus will stop at the Bratislava Airport, the Bus Station, and the city center. The journey to Bratislava will take approximately 90 minutes.

Contact Information

18th International Workshop on Matrices and Statistics 2009

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Scientific Program

Tuesday, June 23, 2009

9:30 - 11:30 **Conference Bus - Bratislava to Smolenice**

11:30 - 13:00 **Registration**

13:00 - 14:00 **Lunch**

14:20 - 14:40 **Opening of the IWMS 2009**

Session I

Chairman: Ivo Marek

14:40 - 15:20 Miroslav Fiedler (Invited Lecture)
New Properties of Cauchy Matrices

15:20 - 15:40 Frank Jerry Hall
Sign Patterns That Require Almost Unique Rank

15:40 - 16:20 **Coffee Break**

Session II

Chairman: Simo Puntanen

16:20 - 17:00 Karl Gustafson (Invited Lecture)
On My Min-Max Theorem (1968) And Its Consequences

17:00 - 17:20 Peter Maličský
A System of Differential Equations Associated with Two Matrices with Antisymmetric Sum

17:20 - 17:40 Anne Selart
Copula Based on Skew Normal Distribution

18:00 - 19:00 **Welcome Drink**

19:00 - 20:00 **Dinner**



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Scientific Program

Wednesday, June 24, 2009

8:00 - 9:00 **Breakfast**

Session III

Chairman: Miroslav Fiedler

9:00 - 9:40 Ivo Marek (Invited Lecture)
Multi-Level Matrix Computations

9:40 - 10:00 Jeffrey J Hunter
On the Stochastic Properties of Semi-Magic and Magic Markov Chains

10:00 - 10:20 Jolanta Grala-Michalak
Premium Principles Based on Quantiles for the Certain Type of Distribution

10:20 - 11:00 **Coffee Break**

Session IV

Chairman: Roman Zmyślony

11:00 - 11:20 Sandra Saraiva Ferreira, Dário Ferreira, Célia Nunes, João Tiago Mexia
Inference for Almost Balanced Models with Multiple Comparisons

11:20 - 11:40 Dário Ferreira, Sandra Saraiva Ferreira, Célia Nunes, João Tiago Mexia
Maximum Likelihood Estimators for Mixed Normal Models, the Newton-Raphson Method

11:40 - 12:00 Célia Nunes, Sandra Ferreira, Dário Ferreira, João Tiago Mexia
Generalized F Distributions with Non-Centrality Parameters with the Convolution of Gamma and Beta Distributions

12:00 - 13:00 **Lunch**

Session V

Chairman: George Styan

14:00 - 14:40 Andrej Pázman (Invited Lecture)
Matrix Analysis of The Information Content in Experiments with Correlated Observations

14:40 - 15:00 Phil Bertrand
When Can Statistics Lie?

15:00 - 15:20 Radoslav Harman, Thomas Klein
Kiefer Completeness in Quadratic Regression Models on Permutation-Reflection Invariant Experimental Domains

15:20 - 15:40 Märt Möls
Identifiability of Linear Combinations of Random Effects in Linear Mixed Model

15:40 - 16:20 **Coffee Break**



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Wednesday, June 24, 2009

Session VI	
Chairman: Lynn LaMotte	
16:20 - 17:00	Mike Kenward (Invited Lecture) <i>Doubly Robust Multiple Imputation</i>
17:00 - 17:20	Tatjana von Rosen <i>On the Inverse of the Patterned Covariance Matrix in a Balanced Mixed Anova Model</i>
17:20 - 17:40	Martin Ohlson, Dietrich von Rosen <i>Explicit Estimators of Parameters in the Growth Curve Model with Linearly Structured Covariance Matrices</i>
17:40 - 18:00	Dietrich von Rosen <i>Restrictions on the Mean Parameters Via Linear Equations in Multivariate Linear Models</i>
18:00 - 19:00	Dinner
19:00 - 20:00	Poster Session



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Thursday, June 25, 2009

8:00 - 9:00 **Breakfast**

Session VII

Chairman: Mike Kenward

9:00 - 9:40 Friedrich Pukelsheim, Bruno Simeone (Invited Lecture)
An L_1 -analysis of the Iterative Proportional Fitting Procedure

9:40 - 10:00 Natalja Lepik
Estimation with Restrictions in Survey Sampling

10:00 - 10:20 Imbi Traat
Calibration of Estimates on the Information from Other Samples

10:20 - 11:00 **Coffee Break**

Session VIII

Chairman: Friedrich Pukelsheim

11:00 - 11:40 Lubomír Kubáček (Invited Lecture)
Criterion Matrices for a Parameter Elimination

11:40 - 12:00 Eva Fišerová, Karel Hron
Orthogonal Regression for Compositional Data Using a Linear Statistical Model with Type-II Constraints

12:00 - 13:00 **Lunch**

13:30 - 17:00 **Excursion to the Castle "Červený Kameň"**

17:30 - 18:30 **Wine tasting in the Chapel of the Smolenice Castle**

19:00 - 20:00 **Dinner**



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Friday, June 26, 2009

8:00 - 9:00 **Breakfast**

Session IX

Chairman: Jeffrey Hunter

9:00 - 9:40 Yonghui Liu (Invited Lecture)
Simultaneous Decomposition for Matrices with Statistical Applications

9:40 - 10:00 Esra Akdeniz Duran, Fikri Akdeniz
The Efficiency of Modified Jackknifed Liu-Type Estimator

10:00 - 10:20 Jan Hauke
Matrix Completion Problems for Correlation Matrices

10:20 - 11:00 **Coffee Break**

Session X

Chairman: Alastair Scott

11:00 - 11:40 Tõnu Kollo, Dietrich von Rosen, Muni S. Srivastava
Testing Structures of the Dispersion Matrix: A Non-Normal Approach

11:40 - 12:00 Hans Joachim Werner
Controlling the Bias of Linear Predictors

12:00 - 13:00 **Lunch**

Session XI

Chairman: Dietrich von Rosen

14:00 - 14:40 Roman Zmyślony, Jacek Bojarski (Invited Lecture)
An Algorithm for Least Squares Estimation of Parameters in Nonlinear Regression Models

14:40 - 15:00 Simo Puntanen, Stephen J. Haslett
Effect of Adding Regressors on the Equality of the BLUEs Under Two Linear Models

15:00 - 15:20 Lynn Roy LaMotte
Following K. Pearson to Test the General Linear Hypothesis

15:20 - 15:40 Hilmar Drygas
Why Gauss Did Not Discover Gram-Schmidt Orthogonalization

15:40 - 16:20 **Coffee Break**



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Scientific Program

Friday, June 26, 2009

Session XII	
Chairman: Tõnu Kollo	
16:20 - 16:40	George P.H. Styan <i>An Illustrated Introduction to 4 x 4 Latin Squares in Europe: 1283–1788</i>
16:40 - 17:00	Gerald E. Subak-Sharpe, George P.H. Styan <i>Some Comments on Terminal Weight Numbers and the Campbell-Youla Generalized Inverse for Resistive Electrical Networks</i>
17:00 - 17:20	Burkhard Schaffrin <i>TLS-Collocation: The Total Least-Squares Approach to EIV-Models with Prior Information</i>
17:20 - 17:40	Stanislav Katina <i>Thin-Plate Spline Relaxation Reconsidered: From Spatial Data to Shape Data Examples</i>
19:00	Conference Dinner



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Saturday, June 27, 2009

8:00 - 9:00 **Breakfast**

Session XIII

Chairman: Hans Joachim Werner

9:30 - 10:10 Alastair Scott (Invited Lecture)

Semi-Parametric Methods for Regression with Response-Selective Sampling

10:10 - 10:30 František Rublík

On Asymptotic Normality and Testing of Equality of the First h Eigenvectors of Covariance Matrices

10:30 - 10:50 Viktor Witkovský, Martina Chvosteková

On Simultaneous Tolerance Intervals in Linear Regression

10:50 - 11:10 Júlia Volaufová, Lynn Roy LaMotte

Summary Measures and Random Coefficients Models

11:10 - 11:30 **Closing of the IWMS 2009**

11:30 - 12:30 **Lunch**

13:00 - 15:00 **Conference Bus - Smolenice to Bratislava**



Posters

- P1 Fikri Akdeniz, Esra Akdeniz Duran
New Difference-Based Estimator of Parameters in Semiparametric Regression Models
- P2 Barbora Arendacká
Independent Chi-Squares in Linear Mixed Models
- P3 Hana Boháčová, Jana Heckenbergerová
On the Nonsensitiveness Regions in the Normal Mixed Linear Model with Type II Constraints
- P4 Martina Chvosteková, Viktor Witkovský
Exact Likelihood Ratio Test for the Parameters of the Linear Regression Model with Normal Errors
- P5 Katarína Cimermanová
Classification of Noisy Data with an Application to Breath Gas Analysis
- P6 Lukáš Laffers, Marian Grendár
Empirical Likelihood Estimation in Interest Rate Diffusion Models
- P7 Martina Hančová
Special Matrices in Time Series Forecasting
- P8 Jana Heckenbergerová, Hana Boháčová, Jaroslav Marek
Plug-In Problem in Discrete GNSS-PIM Algorithms and Nonsensitiveness Region for Test of Position Integrity
- P9 Klára Hornišová
Calibration Intervals for Values of Concentration Based on Measurements of Voltage
- P10 Gejza Wimmer
Locally Best Linear-Quadratic Unbiased Estimators of the Covariance Matrix Elements in a Special Heteroscedastic Regression Model
- P11 Gejza Wimmer Jr.
Comparison of Different Confidence Regions for Regression Parameter in Linear Mixed Model
- P12 Ivan Žežula, Daniel Klein
Orthogonal Decompositions in Growth Curve Models