Monday, May 22

ECAS-ICORS Course: Robust estimation of multivariate location and scatter

Auditorium 3

08:30 – 09:00  Welcome (Cafeteria)

09:00 – 10:30  ECAS-ICORS Course
Rik Lopuhaä (Delft University of Technology)

10:30 – 11:00  Coffee break (Cafeteria)

11:00 – 12:30  ECAS-ICORS Course
Rik Lopuhaä

12:30 - 13:30  Lunch (Cafeteria)

13:30 – 15:00  ECAS-ICORS Course
Rik Lopuhaä

15:00 – 15:30  Coffee break (Cafeteria)

15:30 – 17:00  ECAS-ICORS Course
Valentin Todorov (United Nations Industrial Development Organization, Vienna)

17:00 – 17:30  Welcome (Cafeteria)

17:30 – 18:30  Ice breaker (Cafeteria)
Tuesday, May 23

Auditorium 3

08:00 – 08:45 Welcome (Cafeteria)

08:45 – 09:00 Opening

09:00 – 09:55 Keynote: Lan Wang (Department of Management Science, Miami Herbert Business School, University of Miami)
Statistical Learning for Individualized Decision Rules: A Quantile Approach
Chair: Davy Paindaveine

10:00 – 11:30 Robust multivariate statistics I
Chair: Christophe Croux

10:00 – 10:30 - Peter Rousseeuw (Department of Mathematics, KU Leuven)
The cellwise Minimum Covariance Determinant estimator

10:30 – 11:00 - Eva Cantoni (Research Center for Statistics and Geneva School of Economics and Management, University of Geneva)
Robust Fitting for Generalized Additive Models for Location, Scale and Shape

11:00 – 11:30 - Rik Lopuhaä (Delft University of Technology)
S-estimation in linear models with structured covariance matrices

11:30 - 13:30 Lunch (Administrative Restaurant) and Coffee (Cafeteria)

13:30 – 15:30 Functional outlier detection with industrial applications
Chair: Aurore Archimbaud

13:30 – 14:00 - Pavlo Mozharovskyi (LTCI, Télécom Paris, Institut Polytechnique de Paris)
Anomaly detection using data depth: functional setting

14:00 – 14:30 - Clément Lejeune (Thales Services Numériques) and Tianyi Li (Airbus & Institut de Recherche en Informatique de Toulouse)
Functional Shape based Features in Multivariate Functional Data Applied to Atmospheric Turbulence Online Prediction

14:30 – 15:00 - Fabio Centofanti (Dept. of Industrial Engineering, University of Naples Federico II)
Robust Profile Monitoring for Multivariate Functional Data

15:00 – 15:30 - Mia Hubert (Department of Mathematics, KU Leuven)
MacroPCA for analysing high-dimensional and functional data

15:30 – 15:40 Group photo (Meeting Point: Cafeteria)

15:40 – 16:30 Coffee break and Poster session (Cafeteria)

16:30 – 17:30 In honor of Peter Rousseeuw (Department of Mathematics, KU Leuven)
Chairs: Anne Ruiz-Gazen and Andreas Alfons

17:30 – 17:50 Surprise

18:00 – 19:00 Welcome reception (Cloître)
Tuesday, May 23
Auditorium 5

08:00 – 08:45 Welcome (Cafeteria)

08:45 – 09:00 Opening (Auditorium 3)

09:00 – 09:55 Keynote: Lan Wang (Miami Herbert Business School, University of Miami)

Statistical Learning for Individualized Decision Rules: A Quantile Approach

Chair: Davy Paindaveine (Auditorium 3)

10:00 – 11:00 Non and semi parametrics

Chair: Abdelaati Daouia

10:00 – 10:20 Guillaume Maillard (University of Luxembourg)

Robust density estimation in total variation distance under a shape constraint

10:20 – 10:40 Aida Toma (Bucharest University of Economic Studies, "Gh. Mihoc - C. Iacob" Institute for Mathematical Statistics and Applied Mathematical of the Romanian Academy)

Robust Estimators for Semiparametric Moment Condition Models

10:40 – 11:00 Jiwei Zhao (University of Wisconsin-Madison)

Robust estimation under a semiparametric propensity model for nonignorable missing data

11:30 – 13:30 Lunch (Administrative Restaurant) and Coffee (Cafeteria)

13:30 – 15:30 Linear models and regression

Chair: Eva Cantoni

13:30 – 13:50 Ioannis Kalogridis (KU Leuven)

Robust and Adaptive Functional Logistic regression

13:50 – 14:10 Yannick Baraud (University of Luxembourg)

Robust Estimation in Exponential Families

14:10 – 14:30 Fatma Zehra Doğru (Giresun University)

Heteroscedastic partially linear model with the skew Laplace normal distribution

14:30 – 14:50 Jana Jureckova (Faculty of Mathematics and Physics, Charles University, Prague, Institute of Information Theory and Automation of the Czech Academy of Sciences)

Estimation of expected shortfall in linear model

14:50 – 15:10 Jens Klooster (Erasmus University Rotterdam)

Outlier Robust Inference in (Weak) Linear Instrumental Variable Models

15:10 – 15:30 Manuela Souto de Miranda (Center for Research & Development in Mathematics and Applications, University of Aveiro)

Extremal index robust estimators based on Negative Binomial regression

15:30 – 15:40 Group photo (Meeting Point: Cafeteria)

15:40 – 16:30 Coffee break and Poster session (Cafeteria)

16:30 – 17:30 In honor of Peter Rousseeuw (Department of Mathematics, KU Leuven)

Chair: Anne Ruiz-Gazen and Andreas Alfons (Auditorium 3)

17:30 – 17:50 Surprise (Auditorium 3)

18:00 – 19:00 Welcome reception (Cloître)
› **Fan Zheyi** (Academy of Mathematics and Systems Science, University of Chinese Academy of Sciences)
*A consistent robust regression algorithm with the usage of prior information*

› **Nisrine Madhar** (Laboratoire de Probabilités, Statistique et Modélisation, Sorbonne University, Paris)
*Anomaly Detection in Financial Time Series by Principal Component Analysis and Neural Networks*

› **Ludovic Makong** (Orano Recyclage, La Hague)
*Benchmark Of Clustering Methods Applied On A Rotating Machine Vibration Modes Identification In A Nuclear Industrial Environment*

› **Edoardo Fibbi** (Department of Mathematics, KU Leuven, European Commission - Joint Research Centre, Ispra)
*Co-clustering contaminated data: a robust model-based approach*

› **Caroline Le Gall** (Airbus)
*Comparison of functional outlier detection methods*

› **Conceição Amado** (Center for Computational and Stochastic Mathematics, Department of Mathematics, Lisbon)
*Minimum Distance Estimators in Poisson hurdle model*

› **Otso Hao** (University of Oxford)
*Robust Regression with Discrete Covariates*

› **Gaetan Louvet** (Namur Center for Complex Systems)
*Robustness of scatter depth*
Wednesday, May 24
Auditorium 3

08:30 – 09:00 Welcome (Cafeteria)

09:00 – 10:30 Dimension reduction
Chair: Andreas Alfons

09:00 – 09:30 › Klaus Nordhausen (Department of Mathematics and Statistics, University of Jyväskylä)
   *Tandem clustering with invariant coordinate selection*

09:30 – 10:00 › Pia Pfeiffer (Vienna University of Technology)
   *Robust and sparse CCA: An algorithm for dimension reduction via sparsity inducing penalties*

10:00 – 10:30 › Jakob Raymaekers (Department of Quantitative Economics, Maastricht University)
   *The Influence Function of Graphical Lasso Estimators*

10:30 – 11:30 Robustness for categorical data
Chair: Marco Riani

10:30 – 11:00 › Anna Clara Monti (University of Sannio)
   *Robust Inference for Categorical Response Models*

11:00 – 11:30 › Francesca Torti (European Commission - Joint Research Centre, Ispra)
   *Robust Correspondence Analysis and its applications*

11:30 – 12:15 Lunch (Cafeteria)

12:15 – 20:30 Excursion (Meeting Point: main entrance)
### Wednesday, May 24

**Auditorium 5**

**08:30 – 09:00 Welcome (Cafeteria)**

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<th>Title</th>
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<tr>
<td>09:00 – 10:20</td>
<td>Outlier detection</td>
<td>Andrea Cerioli</td>
<td>Luca Insolia (University of Geneva)</td>
<td>Simultaneous feature selection and outlier detection with optimality guarantees</td>
</tr>
<tr>
<td>09:00 – 09:20</td>
<td></td>
<td></td>
<td>Luca Insolia (University of Geneva)</td>
<td>Simultaneous feature selection and outlier detection with optimality guarantees</td>
</tr>
<tr>
<td>09:20 – 09:40</td>
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<td>Marcus Mayrhofer (Vienna University of Technology)</td>
<td>Outlier detection and explanation for matrix-valued data</td>
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<tr>
<td>09:40 – 10:00</td>
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<td>Bent Nielsen (University of Oxford)</td>
<td>Least Trimmed Squares Regression: Consistent estimation of the number of outliers</td>
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<tr>
<td>10:00 – 10:20</td>
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<td></td>
<td>Patricia Puchhammer (Institute for Statistics and Mathematical Methods in Economics, Vienna University of Technology)</td>
<td>A spatially smoothed MRCD estimator for local outlier detection</td>
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<tr>
<td>10:30 – 11:30</td>
<td>Tests</td>
<td>Sara Taskinen</td>
<td>Marco Marozzi (Ca' Foscari University of Venice)</td>
<td>A robust multivariate combined test for comparison studies</td>
</tr>
<tr>
<td>10:30 – 10:50</td>
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<td>Marco Marozzi (Ca' Foscari University of Venice)</td>
<td>A robust multivariate combined test for comparison studies</td>
</tr>
<tr>
<td>10:50 – 11:10</td>
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<td>Kelly Ramsay (York University, Toronto)</td>
<td>FKWC tests for differences in the covariance structure of functional data</td>
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<tr>
<td>11:10 – 11:30</td>
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<td>Thomas Verdebout (Université Libre de Bruxelles)</td>
<td>Power enhancement for dimension detection of Gaussian signals</td>
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**11:30 – 12:15 Lunch (Cafeteria)**

**12:15 – 20:30 Excursion (Meeting Point: main entrance)**
Thursday, May 25

Auditorium 3

08:30 – 09:00 Welcome (Cafeteria)

09:00 – 09:55 Keynote: John H.J. Einmahl (Tilburg University)
    Extreme value inference for heterogeneous power law data
    Chair: Rik Lopuhaä

10:00 – 11:30 In honor of David Tyler (Department of Statistics, Rutgers University)
    Chair: Klaus Nordhausen and Mengxi Yi

    10:00 – 10:30 › David Tyler
        High breakdown regularized covariance matrices
    11:00 – 11:30 › John Kent (University of Leeds)
        Directional distributions and the half-angle principle

11:30 – 13:30 Lunch (Administrative Restaurant) and Coffee (Cafeteria)

13:30 – 15:00 Robustness in survey sampling
    Chair: David Haziza

    13:30 – 14:00 › David Haziza (University of Ottawa)
        Robust imputation procedures in the presence of influential units in surveys
    14:00 – 14:30 › Francesco Schirripa Spagnolo (University of Pisa)
        Bias control for M-quantile-based small area estimators
    14:30 – 15:00 › Cyril Favre-Martinoz (Insee, Direction Générale, Division Organisation et Relations Extérieures)
        Revivals: An R Package for Robust Estimation in Survey Sampling

15:00 – 15:30 Coffee break (Cafeteria)

15:30 – 17:00 Robust clustering I
    Chair: Luis Angel Garcia-Escudero

    15:30 – 16:00 › Andrea Cerioli (University of Parma)
        Robust estimation and clustering under heavy tails
    16:00 – 16:30 › Perrotta Domenico (European Commission, Joint Research Centre)
        On simulating skewed and cluster-weighted data for studying performance of clustering algorithms
    16:30 – 17:00 › Alfonso Garcia-Perez (Department of Statistics, Universidad Nacional de Educación a Distancia, Madrid)
        Mendelian randomization: A new robust causal effect estimator using summary data
    17:00 – 17:30 › Hristo Inouzhe (Basque Center for Applied Mathematics, Bilbao)
        Hunting bias through trimming

19:30 – 23:00 Gala dinner (Médiathèque José Cabanis)
Thursday, May 25

Auditorium 4

08:30 – 09:00 Welcome (Cafeteria)

09:00 – 09:55 Keynote: John H.J. Einmahl (Tilburg University)
   *Extreme value inference for heterogeneous power law data*
   Chair: Rik Lopuhaä (Auditorium 3)

11:30 – 13:30 Lunch (Administrative Restaurant) and Coffee (Cafeteria)

| 13:30 – 14:50 | Robust inference  
<table>
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<tr>
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<th>Chair: Yannick Baraud</th>
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| 13:30 – 13:50  | Anand Vidyashankar (George Mason University, Fairfax)  
|                 | *Robust and Efficient Post-selection Inference* |
| 13:50 – 14:10  | Tsung-Shan Tsou (Institute of Statistics, National Central University, Taiwan)  
|                 | *Universal closed-form confidence intervals for the ratio of two general population means in the paired design* |
| 14:10 – 14:30  | Carole Baum (Department of Mathematics, University of Liège)  
|                 | *Robustness under missing data: a comparison with special attention to inference* |
| 14:30 – 14:50  | Yuming Zhang (University of Geneva)  
|                 | *A Computationally Efficient Framework for Robust Estimation* |

15:00 – 15:30 Coffee break (Cafeteria)

19:30 – 23:00 Gala dinner (Médiathèque José Cabanis)
Thursday, May 25

Auditorium 5

08:30 – 09:00 Welcome (Cafeteria)

09:00 – 09:55 Keynote: John H.J. Einmahl (Tilburg University)

*Extreme value inference for heterogeneous power law data*

*Chair:* Rik Lopuhaä (Auditorium 3)

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<tr>
<td>10:00</td>
<td>Processes and likelihood methods</td>
<td>Claudio Agostinelli</td>
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<tr>
<td>10:00</td>
<td>Jean-Marc Bardet (Université Paris 1 Panthéon-Sorbonne)</td>
<td>Asymptotic behavior of the Laplacian quasi-maximum likelihood estimator of affine causal processes</td>
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<tr>
<td>10:20</td>
<td>Luca Greco (University Giustino Fortunato)</td>
<td>Weighted likelihood methods for torus data</td>
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<tr>
<td>11:00</td>
<td>Alexandre Lecestre (University of Luxembourg)</td>
<td>Robust estimation for Markovian mixing processes</td>
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11:30 – 13:30 Lunch (Administrative Restaurant) and Coffee (Cafeteria)

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<tr>
<td>13:30</td>
<td>High dimension and regularization</td>
<td>Peter Filzmoser</td>
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<tr>
<td>13:30</td>
<td>Claudio Agostinelli (University of Trento)</td>
<td>Robust estimation for high dimensional generalized linear models</td>
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<tr>
<td>13:50</td>
<td>Charles-Elie Rabier (IMAG, Montpellier)</td>
<td>The SgenoLasso, a new Lasso method dedicated to extreme observations in genomics</td>
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<tr>
<td>14:10</td>
<td>Lise Tubex (Department of Mathematics and Imec, University of Antwerp)</td>
<td>Robust flexible GLM for high-dimensional data containing mixed variable types penalized with a combination of various penalty terms</td>
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<tr>
<td>14:30</td>
<td>Mengxi Yi (Beijing Normal University)</td>
<td>Elasso in estimating the signal dimension of ICA</td>
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15:00 – 15:30 Coffee break (Cafeteria)
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<th>Time</th>
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<tr>
<td>15:30 – 17:30</td>
<td>Robust multivariate data analysis</td>
<td>Chair: Mia Hubert</td>
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<tr>
<td>15:30 – 15:50</td>
<td>Ana Bianco (University of Buenos Aires and CONICET)</td>
<td>Robust Estimation of Conditional ROC Curves</td>
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<tr>
<td>15:50 – 16:10</td>
<td>Valentin Todorov (United Nations Industrial Development Organization, Vienna)</td>
<td>Robust classification tool for three-way data based on the SIMCA methodology</td>
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<td>16:10 – 16:30</td>
<td>M. Rosário Oliveira (CEMAT and Department of Mathematics, Instituto Superior Técnico, University of Lisbon)</td>
<td>Multigroup classification by a robust trace ratio method</td>
<td></td>
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<tr>
<td>16:30 – 16:50</td>
<td>Max Welz (Erasmus University Rotterdam)</td>
<td>Robustness Properties of Correlation Measures in Ordinal Discrete Data</td>
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<td>16:50 – 17:10</td>
<td>Christophe Croux (EDHEC Business School, Lille)</td>
<td>Robust Maximum Association Estimators of a General Regression Model</td>
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<tr>
<td>17:10 – 17:30</td>
<td>Sarah Leyder (University of Antwerp)</td>
<td>Generalized Spherical Principal Component Analysis</td>
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19:30 – 23:00 Gala dinner (Médiathèque José Cabanis)
**Friday, May 26**

**Auditorium 3**

08:00 – 09:00 Welcome (Cafeteria)

09:00 – 09:55 **Keynote:** Emmanuel J. Candès (Stanford University)
*Conformal Prediction in 2023*
*Chair:* Peter Rousseeuw (Amphi Despax)

10:00 – 10:30 Coffee break (Cafeteria)

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<th>10:30 – 11:30</th>
<th>Robust regression</th>
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<td><strong>Chair:</strong> Matias Salibian-Barerra</td>
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10:30 – 11:00  › Graciela Boente (University of Buenos Aires and CONICET)
*Robust estimation for functional logistic regression models based on B-splines*

11:00 – 11:30  › Olcay Arslan (Ankara University)
*Robust parameter estimation and variable selection in joint regression modelling for location, scale and skewness of the skew normal distribution*

11:30 - 13:00 Lunch (Administrative Restaurant) and Coffee (Cafeteria)

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<th>13:00 – 14:30</th>
<th>Robust multivariate statistics II</th>
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<td><strong>Chair:</strong> Graciela Boente</td>
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13:00 – 13:30  › Sara Taskinen (Department of Mathematics and Statistics, University of Jyväskylä)
*Robust second-order stationary spatial blind source separation*

13:30 – 14:00  › Davy Paindaveine (Université Libre de Bruxelles)
*Lp inference for multivariate location based on data-based simplices*

14:00 – 14:30  › Matias Salibian-Barrera (University of British Columbia, Vancouver)
*Robust Elastic Net estimators*

14:30 – 14:45 Closing
### Friday, May 26

**Auditorium 5**

**08:00 – 09:00 Welcome (Cafeteria)**

**09:00 – 09:55 Keynote:** Emmanuel J. Candès (Stanford University)
- *Conformal Prediction in 2023*
- **Chair:** Peter Rousseeuw (Amphi Despax)

**10:00 – 10:30 Coffee break (Cafeteria)**

### 10:30 – 11:30 Robust clustering II
- **Chair:** Agustín Mayo-Iscar

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<td>10:30 – 10:50</td>
<td>Luis Angel Garcia-Escudero, University of Valladolid</td>
<td>Choice of input parameters in robust clustering based on trimming</td>
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<td>10:50 – 11:10</td>
<td>Antoine Godichon-Baggioni, Sorbonne University</td>
<td>A robust model-based clustering based on the geometric median and the Median Covariation Matrix</td>
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<td>11:10 – 11:30</td>
<td>Michal Pesta, Charles University of Prague</td>
<td>Semi-continuous time series for sparse data with volatility clustering</td>
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### 11:30 - 13:00 Lunch (Administrative Restaurant) and Coffee (Cafeteria)

### 13:00 – 14:20 Cellwise and rowwise outliers
- **Chair:** Ricardo Maronna

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<td>13:00 – 13:20</td>
<td>Mehdi Hirari, KU Leuven</td>
<td>Robust PARAFAC for cellwise and rowwise outliers</td>
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<td>13:20 – 13:40</td>
<td>Peng Su, University of Sydney</td>
<td>Robust variable selection under cellwise contamination</td>
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<td>13:40 – 14:00</td>
<td>Una Radojicic, Vienna University of Technology</td>
<td>Minimum Regularized Covariance Trace Estimator and Outlier Detection for Functional Data</td>
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<tr>
<td>14:00 – 14:20</td>
<td>Matus Maciak, Charles University of Prague</td>
<td>Changepoint detection in structured time-dependent functional profiles</td>
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**14:30 – 14:45 Closing (Auditorium 3)**