

International Conference  
**APPLIED STATISTICS 2023**  
Conference Program

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September 24–26, 2023  
Koper/Capodistria, Slovenia

15.00–17.00    **Workshop**  
Room 1

1. **Micro-econometric techniques for program evaluation in the social sciences**  
Anže Burger



6. **Career-relevance of statistics and research methods revisited**

Irena Ograjenšek and Iddo Gal

12.15–13.30 **Break**

13.30–15.15 **Biostatistics 2**

Room 1

*Chair: Janez Stare*

1. **Identifying typical trajectories in longitudinal data: A case of study for patients affected by diabetic kidney disease**

Veronica Distefano, Maria Mannone and Irene Poli

2. **Climate change and the quality of wine: The case of Collio**

Barbara Campisi, Gaetano Carmeci, Gianluigi Gallenti, Giovanni Millo, Matteo Carzedda and Paolo Bogoni

3. **External validation of the OAC3-PAD Risk Score and its underlying survival model**

Nataša Kejžar, Kevin Pelicon, Klemen Petek, Anja Boc, Vinko Boc and Tjaša Vižintin Cuderman

4. **Patient reported outcome measures of patients undergoing a primary knee or hip arthroplasties**

Eva Podovšovnik and Vesna Levašič

5. **Management of patients with acute coronary syndrome during the COVID-19 pandemic in Slovenia**

Tjaša Furlan, Janez Bijec, Dalibor Gavrić, Petra Došenović Bonča, Irena Ograjenšek and Borut Jug

13.30–15.15 **Measurement and modeling**

Room 2

*Chair: Irena Ograjenšek*

1. **Falling for the leading questions**

Vanja Erčulj and Ajda Šulc

2. **Measuring concordance and discordance of student reading literacy data around the world**

Simona Korenjak-Černe and Barbara Japelj Pavešič

3. **Assessing reliability and measurement error for continuous measurements**

Nina Ružič Gorenjec and Nataša Kejžar

4. **Non-linear stochastic model for dopamine cycle**

Nenad Šuvak, Marija Milošević and Jasmina Djordjević

5. **Stochastic SEIPHAR model for epidemic of the SARS-CoV-2 virus**

Jasmina Djordjević, Ivan Papić and Nenad Šuvak

6. **Inverse problem for parameters identification in a modified SIRD epidemic model using ensemble neural networks**

Marian Petrica and Ionel Popescu

15.15–15.40 **Break**

15.40–16.30 **Mathematical statistics and modeling**

Room 1

*Chair: Ana Zalokar*

1. **Adaptive applicability of the Random Environment INAR models**  
Aleksandar Nastić
2. **Approximate Bayesian algorithm for tensor robust PCA using relative entropy**  
Andrej Srakar
3. **Improvements in parameter estimation for some class of the INAR models**  
Miodrag Djordjević

15.50–16.40 **Student session 1**

Room 2

*Chair: Marjan Cugmas*

1. **Guitar tablature transcription with convolutional neural networks**  
Matija Marolt, Igor Nikolaj Sok and Igor Grabec
2. **A package for generating and grading exams**  
Jakob Peterlin
3. **Land take, land use and environmental issues. Is the Kuznets Curve valid? The case of Italy**  
Giuseppe Borruso, Andrea Gallo, Francesco Magris and Nicola Pontarollo
4. **Application of machine learning to fundamental analysis of securities**  
Aleksandr Panteleev
5. **Linguistic analysis of suicide related questions in the online counselling service This is Me**  
Vili Smolič, Sara Atanasova and Marjan Cugmas

16.30–16.40 **Posters**

Room 1

*Chair: Ana Zalokar*

1. **The application of NESTOREv1.0 to forecast strong aftershocks in the North-eastern Italy and Western Slovenia**  
Piero Brondi, Stefania Gentili and Rita Di Giovambattista
2. **Applying walkthrough method for researching the moral references of the Signal application**  
Kristina Rakinić
3. **Reconstruction of sea surface temperature with spectral convolution**  
Matic Klopčič, Matej Kristan and Matjaž Ličer
4. **Data mining of chlorophyll-a satellite data (CMEMS) enables reconstruction of phytoplankton blooms in the Adriatic Sea on large temporal and spatial scales**  
Nejc Prinčič, Martin Vodopivec, Patricija Mozetič and Janja Francé

16.40–16.50 **Break**

16.50–17.40    **Invited lecture**  
Room 1

*Chair: Andrej Blejec*

**1. Data science ethics: Some stories from the trenches**

Richard De Veaux

18.00-19.30    **Sightseeing**

19.45–21.00    **Reception**

9.00–9.50      **Invited lecture**  
Room 1

*Chair: Mihael Perman*

1. **Capture-recapture methods with applications in health and society**  
Dankmar Böhning

9.50–10.20      **Break**

10.20–12.05      **Network analysis**  
Room 1

*Chair: Anuška Ferligoj*

1. **3D visualization of multiway networks**  
Vladimir Batagelj
2. **The network effects of international sanctions: A temporal blockmodeling study of trade sanctions**  
Fabio Ashtar Telarico
3. **Some considerations regarding blockmodeling of dynamic networks**  
Aleš Žiberna
4. **Patterns of scientific collaboration in doctoral education: An analysis of mentor-mentee relationships**  
Marjan Cugmas, Luka Kronegger and Franc Mali
5. **Ranking genes based on gene spreading strength and mutation neighbor influence in network**  
Peter Juma Ochieng, József Dombi, Tibor Kalmár and Miklós Krész
6. **Visibility graph analysis of MODIS satellite evapotranspiration time series of olive groves in southern Italy: Revealing Xylella Fastidiosa induced phytopathogenic status**  
Luciano Telesca and Rosa Lasaponara

10.20–12.05      **Modeling and simulation**  
Room 2

*Chair: Dankmar Boehning*

1. **The linear model vs. the proportional odds model for analysing ordinal and continuous outcomes: Simulation study**  
Georg Heinze, Michael Kammer, Daniel Kraemmer and Daniela Dunkler
2. **Choosing among three proportional odds models for ordinal and count outcomes—a matter of taste? A simulation study**  
Andreas Klinger, Daniela Dunkler, Mariella Gregorich and Georg Heinze
3. **Bayesian state-space modeling of indoor radon concentration and entry rate**  
Marek Brabec
4. **Modelling extreme bivariate data using R software**  
Maria Manuela Neves and Helena Penalva
5. **To tune or not to tune, a case study of ridge logistic regression in small or sparse datasets**  
Hana Šinkovec, Rok Blagus, Georg Heinze and Angelika Geroldinger

12.20–13.30      **Break**

**13.30–15.15 Official Statistics**

Room 1

*Chair: Mojca Bavdaž*

- 1. The use of the Earth observation data for the monitoring of permanent grassland and soil moisture**  
Črt Šuštar
- 2. Using scraped data in calculating inflation**  
Matevž Postrašija
- 3. Using machine learning for assisted classification of articles**  
Črt Grahonja
- 4. Using the cell key method for protection of grids at Statistics Slovenia**  
Manca Golmajer
- 5. Analysis of protection of Census hypercubes with the cell key method**  
Janez Bijec

**13.30–14.20 Student session 2**

Room 2

*Chair: Maja Pohar Perme*

- 1. Prediction models to support adult IgA vasculitis diagnosis and assessing renal involvement**  
Ana Markež, Matija Bajželj, Alojzija Hočevar, Katja Lakota and Rok Blagus
- 2. A new statistical index for evaluating variability in patient state index during pediatric anesthesia**  
Noor Muhammad Khan, Claudia Maria Bonardi, Angela Amigoni and Dario Gregori
- 3. Bridging the gap: Integrating efficacy and quality of life in colorectal cancer observational study using the win ratio approach**  
Maria Vittoria Chiaruttini, Giulia Lorenzoni, Gaya Spolverato and Dario Gregori
- 4. Modeling and forecasting mortality with economic, environmental and lifestyle variables**  
Matteo Dimai
- 5. A study on the use and the necessity of machine learning dimensionality reduction and clustering methods in actuarial sciences: Defining the right methodology for business planning under the requirements of IFRS 17**  
Mateo Antonac

**14.30–15.20 Student session 3**

Room 2

*Chair: Nataša Kejžar*

- 1. The challenge of multiple testing: Case of emission coupons trading**  
Anja Žavbi Kunaver, Marjan Cugmas and Irena Ograjenšek
- 2. Corrections to Bland–Altman analysis for repeated measures data—are they always essential?**  
Maša Kušar
- 3. Handling separation in generalized linear mixed effects models with a random intercept**  
Tina Košuta, Rok Blagus, Georg Heinze and Nina Ružić Gorenjec



4. **An investigation into overrepresentation of COVID-related genes in pathway enrichment analysis for RNA-seq data**

Sara Ahsani-Nasab, Daniele Sabbatini, Elena Pegoraro, Dario Gregori and Luca Vedovelli

5. **Enhancing survey design and analysis: Leveraging machine learning for post-stratification**

Mingmeng Geng and Roberto Trotta

15.20–15.40     **Break**

15.40–17.40     **Invited session**

Room 1

*Chair: Georg Heinze*

1. **Phases of methodological research in biostatistics: Building the evidence base for new methods**

Georg Heinze, Anne-Laure Boulesteix, Michael Kammer, Tim Morris and Ian White

2. **Initial data analysis: Making the effort worthwhile**

Lara Lusa, Carsten Oliver Schmidt, Georg Heinze and Marianne Huebner

3. **Analysis of time-to-event for observational studies: Guidance to the use of intensity models**

Maja Pohar Perme

4. **Correctly accounting for misclassification when linking latent groups with external variables**

Cécile Proust-Lima, Maris Dussartre, Viviane Philipps, Cécilia Samieri, Paul Gustafson and Pamela A. Shaw

17.40–18.00     **Closing**

Room 1

*Chair: Lara Lusa*