

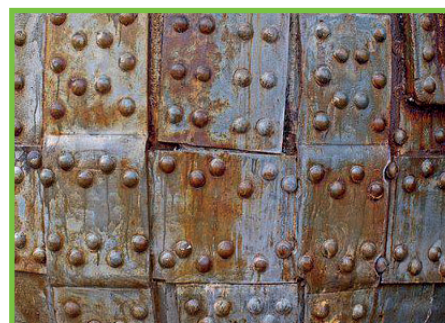
IWSM 2023

37th International Workshop on Statistical Modelling

16.07. – 21.07.2023

Dortmund

Programme



Oral Presentations ¹

Monday, 17th of July

08:00 - 09:15 Registration

09:15 - 09:30 Opening

Andreas Groll

09:30 - 10:30 Contributed Session 1

chair: Kevin Burke

09:30 - 09:50 Marius Ötting, Roland Langrock

Lasso-based order selection in hidden markov models: a case study using stock market data

09:50 - 10:10 Sina Mews, Bastian Surmann, Lena Hasemann, Svenja Elkenkamp

Modelling medical claims data using Markov-modulated market Poisson processes

10:10 - 10:30 Jennifer Pohle, Johannes Signer, Jana A. Eccard, Melanie Dammhahn, Ulrike E. Schlägel

Studying animal interactions with Markov-switching step selection models

10:30 - 11:00 Coffee Break

11:00 - 12:00 Invited Speaker

chair: Elisabeth Bergherr

Brian Reich

Modeling extremal streamflow using deep learning approximations and a flexible spatial process

12:00 - 13:00 Contributed Session 2

chair: Carlo Giovanni Camarda

12:00 - 12:20 Oskar Laverny, Philippe Lambert

Local moment matching with Gamma mixtures and automatic smoothness selection

12:20 - 12:40 Carlina C. Feldmann^S, Sina Mews, Roland Langrock

Modelling time-of-day variation in hidden Markov models using cyclic P-splines

12:40 - 13:00 Luca Brusa^S, Fulvia Pennoni, Francesco Bartolucci

Evolutionary algorithm for the estimation of discrete latent variables models

13:00 - 14:30 Lunch

14:30 - 15:30 Contributed Session 3

chair: Nikolaus Umlauf

14:30 - 14:50 Sophie Potts^S, Elisabeth Bergherr, Constantin Reinke, Colin Griesbach

Prediction-based variable selection for component-wise gradient boosting

14:50 - 15:10 Hannah Klinkhammer^S, Christian Staerk, Carlo Maj, Peter M. Krawitz, Andreas Mayr

Advanced statistical modelling for polygenic risk scores based on large cohort data

15:10 - 15:30 Vincenzo Gioia, Matteo Fasiolo, Ruggero Bellio

Gradient boosting for parsimonious additive covariance matrix modelling

¹Speakers are underlined, the ^S symbol denotes speakers who enlisted for student awards

15:30 - 16:00 Coffee Break

16:00 - 17:20 Contributed Session 4

chair: Marco Grzegorzcyk

16:00 - 16:20 Léa Orsini^S, Caroline Brard, Emmanuel Lesaffre, David Dejardin,
Gwénaél Le Teuff

Bayesian survival analysis using pseudo-observations

16:20 - 16:40 Philippe Lambert, Oswaldo Gressani

Asymmetry issues with non-penalized parameters in Laplace P-splines models

16:40 - 17:00 Miguel De Carvalho, Junho Lee

Bayesian smoothing for joint extremes

17:00 - 17:20 Bryan Sumalinab^S, Oswaldo Gressani, Niel Hens, Christel Faes

Bayesian nowcasting with Laplacian-P-splines

18:00 Welcome Reception

Tuesday, 18th of July

09:00 - 10:00 Contributed Session 5 chair: Christian Staerk

- 09:00 - 09:20 Aisouda Hoshiyar^S, Jan Gertheiss
Fusion, smoothing and model selection for item-on-item regression
- 09:20 - 09:40 Lea Kaufmann^S, Maria Kateri
Statistical inference for high-dimensional logistic regression:
Variable selection and levels fusion for categorical covariates
- 09:40 - 10:00 Ferdinand V. Stoye^S, Roland Langrock
Autoregressive hidden Markov models for high-resolution animal
movement data

10:00 - 10:30 Coffee Break

10:30 - 11:30 Invited Speaker chair: María Durbán

- Maria Innario
Robust regression modelling for ordinal categorical data

11:30 - 12:50 Contributed Session 6 chair: Maria Kateri

- 11:30 - 11:50 Philipp Sterzinger^S, Ioannis Kosmidis
Bias reduced predictions for black-box models
- 11:50 - 12:10 Isabel Millán^S, Amanda Fernández-Fontelo, Pere Puig, David Morina
Estimating what is under the tip of gender-based violence: A statistical
modelling approach
- 12:10 - 12:30 Dorota Mlynarczyk^S, Pedro Puig, Carmen Armero, Virgilio Gómez-Rubio,
Jayne Moquet
A bivariate Poisson regression model for radiation dose estimation
- 12:30 - 12:50 Rafael Arce Guillen, Jennifer Pohle, Björn Reineking, Ulrike Schlägel
Flexible habitat selection analysis with generalized additive models

13:00 - 14:30 Lunch

14:30 - 15:30 Contributed Session 7 chair: Colin Griesbach

- 14:30 - 14:50 Yingjuan Zhang^S, Jochen Einbeck, Reza Drikvandi
A multilevel multivariate response model for data with latent structures
- 14:50 - 15:10 Marie Analiz April Limpoco^S, Christel Faes, Niel Hens
Linear mixed modelling of federated data when only the mean, covariance,
and sample size are available
- 15:10 - 15:30 Lawson Wang, Sebastiaan Höppner, Laura Trotta
Extending central statistical monitoring to electronic patient-reported
outcomes in clinical trials

15:30 - 16:00 Coffee Break

16:00 - 17:00 Contributed Session 8**chair:** Dae-Jin Lee16:00 - 16:20 Christian H. Weiß

Ordinal Compositional Data and Time Series

16:20 - 16:40 Yuzhang Ge^S, Arash Rabbani, Hao Gao, Dirk Husmeier

Bayesian inference of dynamic models emulated with a time series

Gaussian process

16:40 - 17:00 Gabriel R. Palma^S, Rodrigo F. Mello, Wesley A. Godoy, Eduardo Engel,

Douglas Lau, Charles Markham, Rafael A. Moral

Forecasting insect abundance using time series embedding and
environmental covariates

17:00 - 19:00 Poster Session

Wednesday, 19th of July

09:00 - 10:00 Contributed Session 9 **chair:** Sabine Schnabel

- 09:00 - 09:20 Arne Janssens^S, Pieter Libin, Gijs Van Pottelbergh, Jonas Crèvecoeur,
Bert Vaes, Thomas Neyens
Assessing spatial trends in health outcomes using primary care registry data
- 09:20 - 09:40 Hiu Ching Yip^S, Gianluca Mastrantonio, Enrico Bibbona, Daria Valente,
Marco Gamba
A hierarchical spatio-temporal model for time-frequency data:
An application in bio-acoustic analysis
- 09:40 - 10:00 Arantxa Urdangarin^S, Thomás Goicoa, María Dolores Ugarte
A one-step spatial+ approach to mitigate spatial confounding in multivariate
spatial areal models

10:00 - 10:30 Coffee Break

10:30 - 11:30 Invited Speaker **chair:** Andreas Groll

Alexander Gerharz, Mathias Kolodziej (BVB)
Data science meets football

11:30 - 12:50 Contributed Session 10 **chair:** Arnöst Komárek

- 11:30 - 11:50 Chris Kolb^S, Bernd Bischl, Christian L. Müller, David Rügamer
Sparse modality regression
- 11:50 - 12:10 Andrew McInerney^S, Kevin Burke
Feedforward neural networks from a statistical-modelling perspective
- 12:10 - 12:30 Giuseppe Alfonzetti, Ruggero Bellio, Yunxiao Chen, Irini Moustaki
Efficient stochastic learning of graphical structures for large-scale mixed
data surveys
- 12:30 - 12:50 Chiara Balestra^S, Andrés Madariaga, Emmanuel Müller, Christian Staerk,
Andreas Mayr
An information-theoretic perspective on double descent in flooded boosting

13:00 - 14:30 Lunch

14:30 Excursion

Thursday, 20th of July

09:00 - 10:00 Contributed Session 11 chair: Vito Muggeo

- 09:00 - 09:20 Jari Claes^S, Annelies Agten, Thomas Neyens, Christel Faes
The influence of resolution on the predictive power of spatial heterogeneity measures as a biomarker of disease severity
- 09:20 - 09:40 Vanda Inácio, María Xosé Rodríguez-Álvarez
Induced nonparametric ROC surface regression
- 09:40 - 10:00 Annika Strömer^S, Nadja Klein, Christian Staerk, Hannah Klinkhammer, Andreas Mayr
Complexity reduction via deselection for boosting distributional copula regression

10:00 - 10:30 Coffee Break

10:30 - 11:30 Invited Speaker chair: Andreas Mayr

- Gillian Heller
Back to the future: model what you measure

11:30 - 12:10 Contributed Session 12 chair: Jochen Einbeck

- 11:30 - 11:50 Mattias Wetscher^S, Johannes Seiler, Reto Stauffer, Nikolaus Umlauf
Stagewise boosting distributional regression
- 11:50 - 12:10 Chiara Di Maria, Vito M. R. Muggeo
Semi-parametric estimation of growth curves

12:10 - 13:00 Annual General Meeting

- Helga Wagner
Chair of the Statistical Modelling Society
- Andreas Mayr
The Statistical Modelling Journal
- Jochen Einbeck
Announcement of the 38th IWSM 2024

13:00 - 14:30 Lunch

14:30 - 15:50 Contributed Session 13 chair: María Xosé Rodríguez Álvarez

- 14:30 - 14:50 Idemauro Antonio Rodrigues de Lara, Gabriel Rodrigues Palma, Victor José Bon, Carolina Reigada, Rafael de Andrade Moral
Multi-state models for double transitions associated with parasitism in biological control
- 14:50 - 15:10 Ilse Cuevas Andrade^S, Ardo van den Hout, Nora Pashayan
A multi-state model for the natural history of prostate cancer; using data from a screening trial
- 15:10 - 15:30 Lore Zumeta-Olaskoaga^S, Andreas Bender, Dae-Jin Lee
Flexible modelling of time-varying training exposures on the risk of recurrent injuries in football
- 15:30 - 15:50 Carlo G. Camarda, María Durbán
Coherent cause-specific mortality forecasting via constrained penalized regression models

15:50 - 16:20 Coffee Break

16:20 - 17:40 Contributed Session 14

chair: Jan Gertheiss

- 16:20 - 16:40 Tobias Hepp, Jakob Zierk, Elisabeth Bergherr
Component-wise boosting for mixture distributional regression models
- 16:40 - 17:00 Colin Griesbach, Tobias Hepp
Confidence intervals for finite mixture regression based on
resampling techniques
- 17:00 - 17:20 Steven Golovkine, Tom Chassard, Alice Meignié, Emmanuel Brunet,
Jean-Francois Toussaint, Juliana Antero
Functional multilevel modelling of the influence of the menstrual cycle on the
performance of female cyclists
- 17:20 - 17:40 Garritt L. Page, Matthew K. Seeley, Brian G. Pietrosimone
Clustering anterior cruciate ligament reconstruction patients using
functional walking biomechanics
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19:00 Conference Dinner

Friday, 21th of July

09:00 - 10:20	Contributed Session 15	chair: Paul Eilers
09:00 - 09:20	<u>Nikolaus Umlauf</u> , Johannes Seiler, Mattias Wetscher, Nadja Klein	
	Boosting distributional soft regression trees	
09:20 - 09:40	<u>Moritz Berger</u> , Christian Staerk	
	Adaptive random forests for high dimensional regression	
09:40 - 10:00	<u>Timo Adam</u> , Marius Ötting, Rouven Michels	
	State-switching decision trees	
10:00 - 10:20	<u>Michele Lambardi di San Miniato</u> , Ruggero Bellio, Luca Grassetti, Paolo Vidoni	
	On prediction with equal-tailed intervals with an application to sensor data analytics	

10:20 - 10:50	Coffee Break	
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10:50 - 11:50	Invited Speaker	chair: Helga Wagner
	Simon Wood	
	On Covid, dynamic models and inferring smooth functions	

11:50 - 13:10	Contributed Session 16	chair: Helga Wagner
11:50 - 12:10	<u>Peter Radvanyi</u> , Claire Miller, Craig Alexander, Marnie Low, Wayne R. Jones, Luc Rock	
	Computationally efficient ranking of groundwater monitoring locations	
12:10 - 12:30	<u>Jamie Wilson</u> , Kevin Burke, Norma Bargary	
	Gaussian process models: From astrophysics to industrial data	
12:30 - 12:50	<u>Vicente Núñez-Antón</u> , Mabel Morales-Otero	
	Bayesian spatio-temporal conditional overdispersion models proposals	
12:50 - 13:10	<u>Thomas Kneib</u> , Hannes Riebl, Nadja Klein	
	A Distributional regression approach for Gaussian process responses	

13:10 - 14:30	Closing & Lunch	
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Poster Presentations

Tuesday, 18th of July, 17:00 - 19:00

1. Mazin Aouf^S, Kenan M. Matawie. Modelling single-nucleotide polymorphism to assess genetic contribution to disease progression
2. Paul Bach^S, Nadja Klein. Spatially adaptive Bayesian P-splines
3. Robert Bajons^S, Kurt Hornik. A weighted curve clustering approach for analyzing pass rush routes in american football
4. Julia Berginski^S, Alexander Silbersdorff. Playful introduction to data competencies for economic students
5. Stella Bollmann, Andreas Groll, Michael M. Havranek. Accounting for clustering in automated variable selection using hospital data: A comparison of different LASSO approaches
6. Ludwig Bothmann, Lisa Wimmer, Omid Charraikh, Tobias Weber, Hendrik Edelhoff, Wibke Peters, Hien Nguyen, Caryl Benjamin, Annette Menzel. An active deep learning method for high out-of-sample predictive performance in image classification
7. Kevin Burke. A smooth Laplace regression model
8. Angela Carollo^S, Jutta Gampe, Paul Eilers, Hein Putter. **TwoTimeScales**: an R-package for smoothing hazards with two time scales
9. M. Chavent, V. Darmendrail, D. Feral, H. Lorenzo, F. Pourtier, J. Saracco. A new statistical methodology to detect earnings management
10. Claudia Collarin, Matteo Fasiolo, Claudio Agostinelli. Automatic effect selection for generalized additive models
11. Pietro Colombo^S, Claire Miller, Ruth O'Donnell, Xiaochen Yang. A multifidelity framework for wind speed data
12. Daniele Cuntrera, Vito M.R. Muggeo, Luigi Augugliaro. Group penalized models with an adaptive non-convex penalty function
13. Alexandra Daub^S, Andreas Mayr, Boyao Zhang, Elisabeth Bergherr. Gradient boosting for GAMLSS using adaptive step lengths
14. Davide Di Cecco, Andrea Tancredi. On the nature of one-inflation in microbial diversity studies
15. Abdelmajid Djennad, Ross Harris, Stefan Jahr, Andre Charlett, Anne Presanis, Daniela De Angelis. Estimating prevalence of opiate and crack cocaine use in England
16. Christina Empacher^S, Udo Kamps. Prediction of record performances in sports in a record-values model
17. Juan Carlos Espinosa-Moreno^S, Fernando García-García, Dae-Jin Lee, María J. Legarreta-Olabarrieta, Susana García-Gutiérrez, Naia Mas. Competing risk modelling for in-hospital length of stay

18. Xavier Espuña, Lesly Acosta, Josep A. Sanchez-Espigares, Xavier Tort-Martorell. Mixed nonlinear modelling in food engineering: determination of the salting time of boneless dry-cured Cerretan hams
19. Rodney V. Fonseca, Rogério G. Negri , Aluísio Pinheiro, Abdourrahmane Atto. Wavelet spatio-temporal change detection on multitemporal SAR images
20. Marco Grzegorzcyk. Learning Gaussian Bayesian networks from incomplete data - the Bayesian way
21. Jonas Heiner ^S, Jan Hengstler, Andreas Groll. Grouped regression modeling of proteins
22. Sebastiaan Höppner, Marc Buyse, Laura Trotta. Detecting heterogeneity of treatment effect between centers in multicenter randomized clinical trials
23. Darshana Jayakumari ^S, Jochen Einbeck, John Hinde, Rafael A. Moral. Understanding the role of conditional residual distances from simulated envelopes in half normal plots
24. Oliver Kemp ^S, Ioannis Kosmidis. Targeted bias reduction for generalised additive models
25. Lars Knieper ^S, Elisabeth Bergherr, Torsten Hothorn, Nadia Müller-Voggel, Colin Griesbach. A novel gradient boosting framework for generalised additive mixed models
26. Klaus Langohr, Andrea Toloba López-Egea, Guadalupe Gómez Melis. Interval-censored covariates in regression models
27. M.W. Lee ^S, M. de Carvalho, D. Paulin, S. Pereira, R. Trigo, C. Da Camara. Bayesian regularisation for tail index regression
28. Benoit Lique, Sarat Moka, Samuel Muller. Best Subset Selection for Principal Components Analysis and Partial Least Square models using Continuous Optimization
29. Rui Martins, Bruno de Sousa, Thomas Kneib, Maïke Hohberg, Nadja Klein, Elisa Duarte, Vítor Rodrigues. The consequences of not completing the generational cohort in estimating age-at-menopause
30. Kenan M. Matawie, Sargon Hasso. Information retrieval models with GPT-3: Techniques for improving ranking performance through text enhancement
31. Theresa Meier, Nikita Paschan, Andrea Böhnisch, Henri Funk, Alexander Sasse, Helmut Küchenhoff. Analysis of climatological drivers of low-flow events in Hydrological Bavaria using large ensemble climate projections
32. Rouven Michels ^S, Marius Ötting, Dimitris Karlis. Modeling women’s football scores with bivariate distributions from the Sarmanov family
33. Annette Möller, Ann Cathrice George, Jürgen Groß. Using measures of effect size and decision trees for variable selection
34. Jack Moore, Jamie Wilson, Norma Bargary, Kevin Burke. A comparison of time series forecasting models on industrial process data
35. Darcy Steeg Morris ^S, Andrew M. Raim. Comparing trial and variable association in contingency table data using multinomial models for clustered data
36. Lennart Oelschläger ^S, Dietmar Bauer. Bayesian probit models for preference classification: An analysis of chess players’ propensity for risk-taking
37. Rémi Perrichon ^S, Xavier Gendre, Thierry Klein. Kriging wind on pressure levels to enrich the statistical modelling of aircraft trajectories

38. Roman Pfeiler^S, Helga Wagner, Hans Peter Stüger, Karin Weyermair, Sabrina Kuchling, Patrick Hyden. Wastewater analysis in the light of Covid-19: A GAMLSS approach
39. Hildete P. Pinheiro, Fernando H.S. Barreto. Evaluating academic performance using non-parametric regression
40. Anja Rappl, Elisabeth Bergherr. Bayesian effect selection in structured piecewise additive joint models using the NBPSS prior
41. Jone Renteria, Lore Zumeta-Olaskoaga, Eder Bikandi, Jon Larruskain, Dae-Jin Lee. Multivariate survival trees for prediction of lower limb injuries in professional male and female football players
42. Bijit Roy^S, Emmanuel Lesaffre. Focussed information criteria for model selection - a Bayesian perspective
43. Alejandro Roza^S, Thomas Neyens, Christel Faes. Spatio-temporal modelling using an opportunistically sampled open-survey data: a simulation study based on the Belgian Great Corona Study
44. Maximilian Schuessler, Elizaveta Skarga, Pascal Geldsetzer, Ying Lu, Maike Hohberg. Meta-analysis of variability in survival outcomes in precision oncology trials
45. Sabine K. Schnabel. Challenges in statistical consulting for animal science
46. Quentin E. Seifert^S, Elisabeth Bergherr, Benjamin Säfken. Neural additive quantile regression
47. Nastaran Sharifian, Kevin Burke. Mixed effects neural networks for longitudinal k -Inflated count responses
48. Ivo Sousa-Ferreira^S, Ana Maria Abreu, Cristina Rocha. A flexible non-mixture cure model for recurrent gap time data
49. Nikolai Spuck^S, Matthias Schmid, Moritz Berger. A tool to detect nonlinearity and interactions in generalized regression models
50. Christian Staerk, Carlo Maj, Oleg Borisov, Hannah Klinkhammer, Peter Krawitz, Andreas Mayr. Variable selection for statistical fine-mapping and prediction modelling of polygenic traits
51. Reto Stauffer, Georg J Mayr, Achim Zeileis. Long-term foehn reconstruction combining unsupervised and supervised learning
52. Kouji Tahata, Yusuke Kori. Asymmetry model and its properties for square contingency tables
53. Kanae Takahashi, Kouji Yamamoto. A superiority test for comparing sensitivity, specificity, and predictive values of two diagnostic tests
54. Germaine Uwimpuhwe^S, A. Singh, N. Akhter, B. Ashraf, T. Coolen-Maturi, T. Robinson, S. Higgins, J. Einbeck. Individual participant data meta-analysis: pooled effect of EEF funded educational trials on low baseline attaining group
55. Massimo Ventrucchi, Garritt L. Page. Estimating short-term air pollution effects on health via spectral methods
56. Maximilian Weigert, Kai Becker, Helmut Küchenhoff. Change point regression for estimated time series: an application to COVID-19 hospitalization data

57. Paul Wilson, Jochen Einbeck. A consistent way to define p -values
58. Hilal Yagimli^S, Julia Berginski, Alexander Silbersdorff. Analyzing blended learning education with eye tracking and deep learning methods
59. Wellington Yuanhe Zhao^S, Luis Gustavo Nonato, Cibele M. Russo. Crime predicting models in the São Paulo state of Brazil
60. Schyan Zafar^S, Geoff K. Nicholls. A scalable and embedded Diachronic Sense Change model
61. Zhaoxi Zhang^S, Vanda Inácio. Bayesian nonparametric inference for the three-class covariate-specific overlap coefficient
62. Claudia Di Caterina, Alessandra Salvan, Nicola Sartori. Mixture confidence sequences for regression coefficients in generalized linear models
63. Caizhu Huang, Jierui Du, Claudia Di Caterina. Rate of return to education of compliers: Estimation based on Rubin causal models
64. Lizzie Neumann^S. Covariate-adjusted association of sensor outputs using a nonparametric estimate of the conditional covariance
65. Frederike Vogel^S. Examining quantiles of sensor outputs in structural health monitoring
66. Philipp Wittenberg, Jan Gertheiss. Modelling SHM sensor outputs: A functional data approach



1973–2023

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