10 December 2025

TRANSREGIO Express

Transregio 391-Newsletter, Edition No.3

Contents of this issue:

Dear colleagues and friends,

I look back with gratitude on a very active first year. Our Topic Circles on Experimental Design and on High Dimensions have held workshops recently with outstanding guests, excellent presentations, and many stimulating discussions. Another highlight was our retreat in Paderborn. It was great to see the fantastic poster presentations by our doctoral students and to participate in the lively scientific discussions. I always look forward to our meetings and the exchange of fascinating ideas. Many thanks to everyone who was involved in organizing these wonderful events!

There have been a few changes in our team. Christine has retired but will continue to work with us as PI in B01. Jonas has returned from parental leave. With all these positive impressions, I am optimistic about the coming year and look forward to our TRR conference next June!

I wish everyone a merry and peaceful Christmas and all the best for the New Year. Stay healthy and full of energy,

Roland

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Senior Professorship for Christine Müller

On September 30, 2025, **Christine Müller** (B01) took her well-deserved retirement. We are delighted that she is continuing her work for the TRR as a **senior professor** without interruption from October 1, 2025.

Honors, scholarships and awards

We are happy to congratulate our TRR members Nadja Klein and Manuel Frondel for their prizes

Manuel Frondel (C03) was awarded the "Ordnungspolitischer Preis der Familienunternehmer" (Family Business Regulatory Policy Award) on November 13, 2025, as part of the expert advisory board of Republik 21. As one of nine authors, he received the award for the FAZ article "Der Befreiungsschlag" (The Liberating Blow) published on January 14, 2025. In the article, the authors show that Germany's approach to energy transformation to date has been associated with high costs and low emission savings. They propose a reorientation of climate and energy policy with a comprehensive European emissions trading system, which would free Germany from enormous bureaucratic burdens and ensure a secure energy supply at competitive prices.

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Nadja Klein (A07) was awarded (together with Clara Hoffmann) the Mitchell Prize by the International Society for Bayesian Analysis. The authors received the prize for their work on uncertainty quantification in neural networks to improve the estimation of the probability distribution of the steering angle in autonomous driving using the Implicit Copula Neural Linear Model

© Sameer Deshpande (SCC)

We are also delighted to congratulate **Viola Helmers** (C03) on completing her doctorate:

Viola Helmers (2025). Policy Design, Impact, and Acceptance: Essays in Transportation Economics. DOI: 10.13154/294-13686.

"In my dissertation, I look at the transition towards more sustainable mobility from different policy viewpoints. This includes an impact evaluation of the German Aviation Tax, analyses about owners of e-bike and public transport tickets, and survey-based experiments on the acceptance for different policy measures."

Save the dates

Scientific Writing Workshop

On December 12, 2025, STAIRS will host a follow-up to the well-received Scientific Writing Workshop with Heidi Douglas (Paderborn University) at TU Dortmund University.

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The workshop focuses on essential skills for effective scientific writing: Participants may learn how to develop a clear and coherent narrative, and craft varied and precise sentence structures to avoid repetition. They explore efficient reviewing strategies and look into the responsible use of AI tools, highlighting where they can support the writing process and where they may be harmful. The course is open to all scientific staff in TRR 391, please contact stairs@statistik.tu-dortmund.de for a last minute registration.

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TRR 391 Conference 2026

The TRR Conference 2026 will take place from Wednesday to Friday, June 10-12, 2026, each full day at the Umspannwerk in Recklinghausen. A dedicated website with further information will be prepared at the beginning of 2026.

Half-Day Training on Cultural Awareness

The Equal Opportunity Advisory Board is pleased to announce that it will be offering an internal workshop on cultural awareness this coming January (date to follow). Designed for researchers working in international teams, this interactive session titled "Cultural Awareness in Research Collaboration - Deepening Understanding, Enhancing Cooperation" combines theory with practice-based exercises drawn from everyday research contexts. We invite participants to learn how to recognize and navigate cultural differences constructively, prevent misunderstandings, and strengthen collaboration across disciplines and backgrounds. The training is offered in a hybrid format, with the option to join online.

Special Issue

Due to several requests, the deadline for the special issue on "New Statistical Methods in the Context of Energy Transition" of the Journal of Economics and Statistics was extended to 15th January 2026. The Call for Papers can be found at https://www.jbnst.de/en/.

Retreat 2026

The detailed planning for our next retreat will commence at the start of the new year. Accordingly, we welcome suggestions for the location and implementation of the 2026 retreat until the end of 2025. The retreat will take place during one of three potential periods: November 4-6, November 11-13, or November 18-20, 2026.

Past events

TC01 Workshop

The Workshop **"Robust Statistics and Experimental Design for Spatio-temporal Data"** took place from September 26 to 27, 2025, at TU Dortmund University. More than 35 people participated and the eight invited speakers came from seven different countries. The first and the last sessions of the six sessions included short talks by Robin Solinus, Pauline Baur, Sonja Kuhnt, Justin Lamberti, Johannes Bao, and Christine Müller, all presenting challenges around the TRR 391. The workshop was followed by a farewell celebration of Christine Müller on Saturday afternoon.
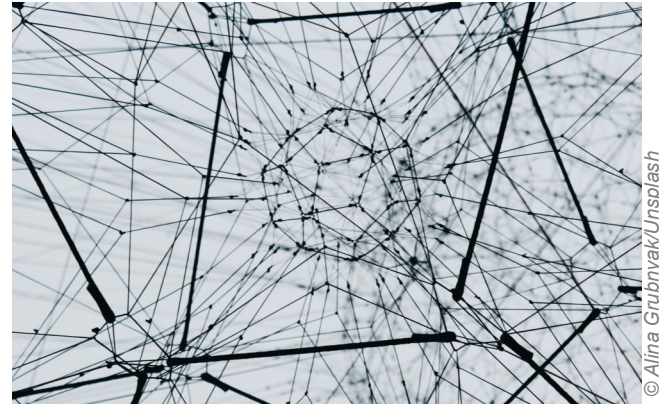

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StatNet25 Workshop

From September 22 to 25, 2025, more than 25 researchers gathered at the picturesque Hotel Kloster Nimbschen near Leipzig for the Workshop "New Trends in Statistical Network Data Analysis". The workshop was supported by TRR funds and brought together a vibrant international group of scholars to explore the latest developments in statistical network analysis – ranging from Exponential Random Graph and Relational Event Models, to Latent Space Models, Graphons, and Dynamic/Time-Series Models.

The event succeeded in bridging different modelling strategies and application areas, sparking new ideas

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and laying the groundwork for future collaborations across disciplines. The diverse participants represented institutions from across Europe and beyond.

Guest stay of Konstantinos Fokianos

Konstantinos Fokianos from the University of Cyprus visited us in November and collaborated with the group of Roland Fried (A04, B02). In particular, we cooperated in the construction of flexible models for the conditional mean and the conditional dispersion of spatio-temporal data within the framework of generalized linear models. We plan to continue our cooperation concerning the analysis of intervention effects in such frameworks.

Open House at TU Dortmund University

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On November 8, our TRR was represented at the TU Dortmund Open House. Visitors of all ages were able to playfully explore how the energy mix is dynamically composed and thus controls the price depending on the time of day, using a replica of the supply stack model made from Duplo bricks.

Hidden Curriculum Workshop

In our first cooperation with the RGS Econ and the RTG "Regional Disparities and Economic Policy", STAIRS offered a full-day workshop entitled "The Hidden Curriculum" on November 6. The workshop was held at UDE by Prof. Daniel I. Rees, who is a professor in the Department of Economics at the Universidad Carlos III de Madrid. Twenty-six participants, including five from the STAIRS program, took part in this practical guide for doctoral students and learned about "Everything You Weren't Taught in Graduate School about Doing Applied Research". Among other things, the workshop covered the nuts and bolts of writing and publishing. The collaboration between STAIRS, RGS Econ, and RTG "Regional Disparities and Economic Policy" worked seamlessly, and we look forward to future joint projects.

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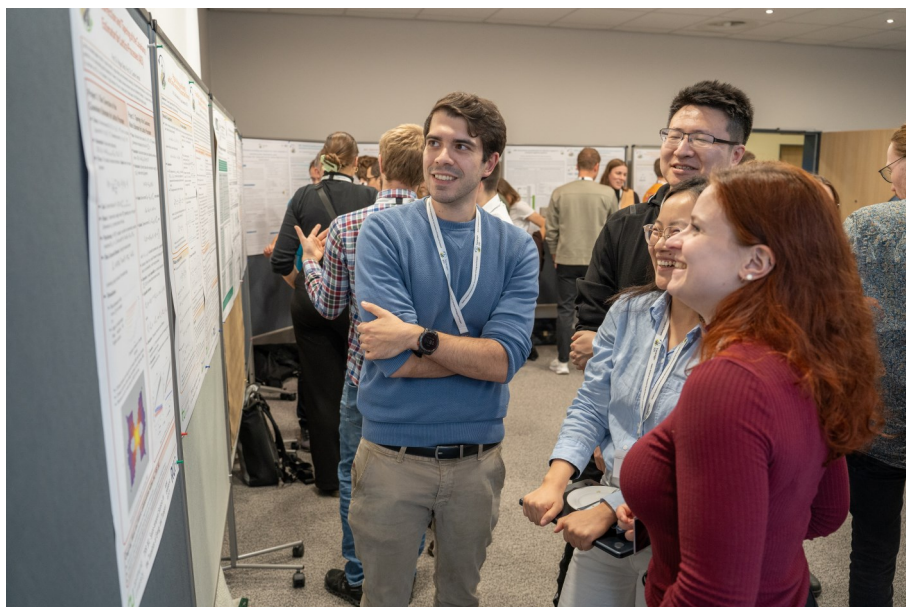Transregio
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TRR and STAIRS Retreat 2025

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From November 12 to 14, 2025, more than 85 TRR members gathered in Paderborn at the Welcome Hotel for our Retreat 2025.

The retreat kicked off on November 12 with a session of our Integrated Research Training Group STAIRS. It featured a networking event and an academic writing workshop. The program on November 13 included presentations on collaborations across projects from our TRR and a cross-project poster session. The retreat concluded on November 14 with presentations on organizational updates, meetings of TRR Bodies, and a training session on intercultural communication.

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TC02 Workshop

From November 27 to 28, 2025, the TC02 Workshop "Spatio-temporal Statistics in High Dimensions" took place at TU Dortmund University. Bringing together more than 30 researchers focused on high-dimensional and regularized statistical methodology, the workshop offered a rich program with invited and contributed talks covering cutting-edge topics such as high-dimensional regularization, spatio-temporal covariance estimation, distribution- and copula-based forecasting, VAR and cointegration models, and probabilistic modelling for energy, climate and beyond.

With participants from different backgrounds, the workshop provided an ideal platform to discuss methodological innovations relevant for the analysis of complex spatio-temporal data – from climate modeling over energy system forecasting to multivariate time series and extremes.

TRR Research Seminar

You can find an up-to-date list of all seminar talks on our website. All seminars are also listed in the TRR calendar so that you don't miss any information about talks if you subscribe to it.

Since our previous newsletter, we have hosted 8 lecturers:

Nazarii Salish, Charles III University of Madrid: Tools for Understanding the Impact of Temperature Changes on Consumer Prices in the Euro Area

Kostas Fokianos, University of Cyprus: Count Network Autoregression

Morten Nielsen, Aarhus University: Improved inference for nonparametric regression and regression-discontinuity designs

Marcus Mayrhofer, TU Vienna: Robust Explainable Multivariate and Matrix-variate Data Analysis

Johan Segers, KU Leuven: Statistics for numerics: improving Monte Carlo integration by control variates

Patrik Guggenberger, Penn State University: On the numerical approximation of minimax regret rules

Sven Otto, University of Cologne: Functional Factor Regression with an Application to Electricity Price Curve Modeling

Christian Landschützer, TU Graz: Beyond Mass, Form and Transit Time – Understanding the Dynamics of Moving Goods

Most of the presentations are available at our Youtube channel @TRR391-spatio-temporal.

For next year, the following guests have already agreed to present their work:
David Bolin, Martin Wendler, Julia Schaumburg, Paul Doukhan, Jan Ditzen.

We look forward to further invitations to the TRR Research Seminar next summer semester.
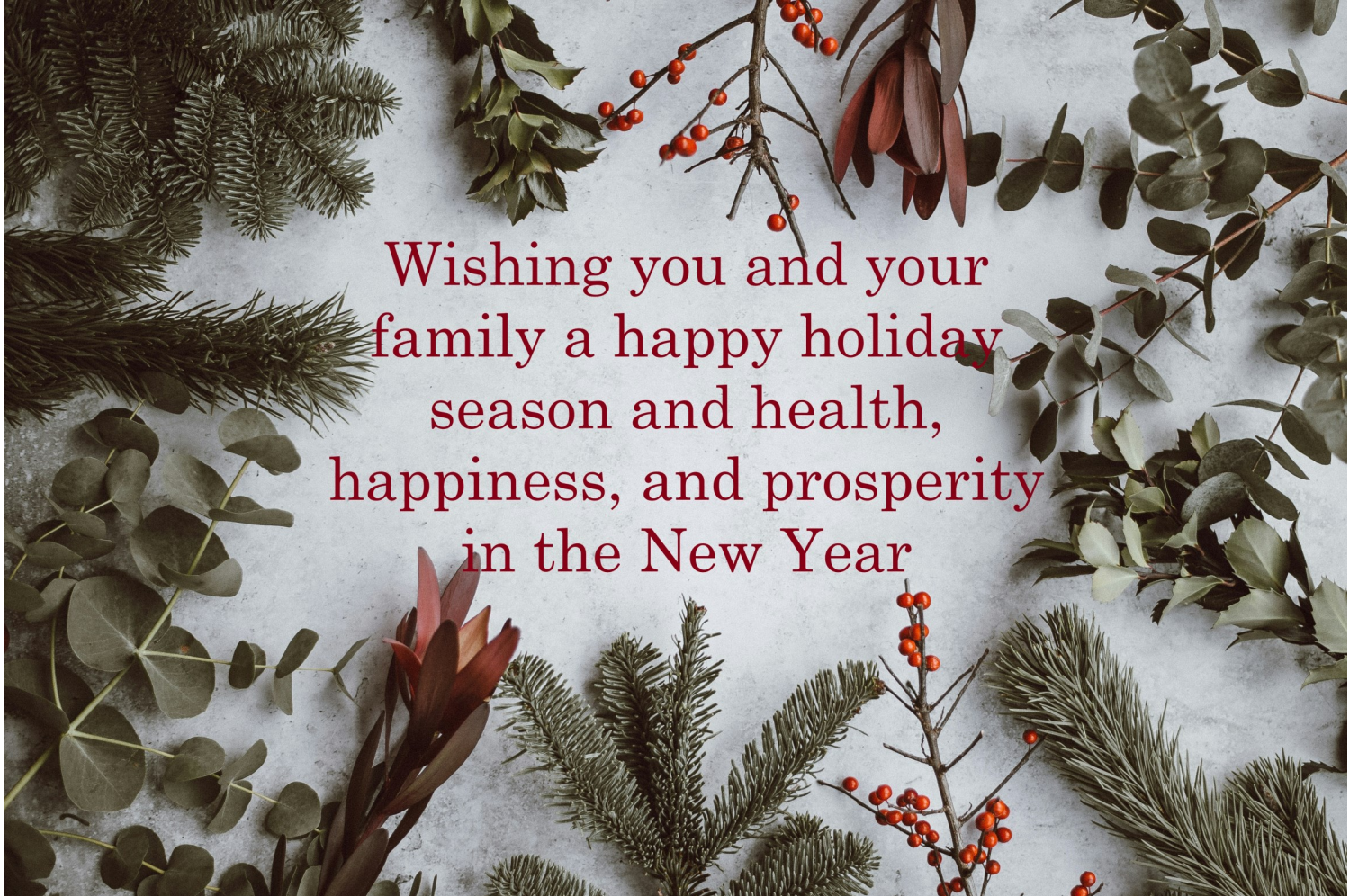
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Miscellaneous

Christine Müller (B01) became a member of the External Advisory Board of the Mathematics Department of KU Leuven (Belgium).

Nadja Klein (A07) took part in a panel on "AI - Past, Present & Future" at the Berlin Science Week on November 5th, 2025 at the Berlin-Brandenburg Academy of Sciences and Humanities.

Christoph Hanck (A06, C01) was interviewed in the 17th episode "Will AI soon replace professors" of the podcast "Data Science Talks".

From November 2025 to April 2026, **Daniel Dzikowski** (C01) will be conducting research in the U.S., visiting Princeton University and the Federal Reserve in Cleveland. While there, he will collaborate with Prof. Ulrich K. Müller (Princeton) and Kurt G. Lunsford (Cleveland) on issues pertaining to statistical inference in long-term macroeconomic forecasting.

Nadja Klein (A07) will moderate the COPSS-NISS Leadership Webinar "The Role of Bayesian Statistics in an Age of AI" with Prof. David Dunson and Prof. Xuming He on January, 27, 2026.

Wishing you and your family a happy holiday season and health, happiness, and prosperity in the New Year

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Publications

Peer-reviewed articles (accepted)

Axt, I., Fried, R. (2025). Robust scale estimation for strongly mixing processes under shifts in the mean. *To appear in Statistics - a Journal of Theoretical and Applied Statistics*. (A04).

Bücher, A., Dette, H. (2025). On the lack of weak continuity of Chatterjee's correlation coefficient. *To appear in Statistical Science.* Already available on arXiv. DOI: 10.48550/arXiv.2410.11418. (A07).

Frondel, M., Thiel, P., Vance, C. (2026). The Distributional Consequences of Tax Pass-Through: The Case of Germany's Fuel Tax Discount. *To appear in Regional Science and Urban Economics.* (C03).

Klein, N., Bianco, N. (2025). Contributed discussion on "Model uncertainty and missing data: An objective Bayesian perspective" by Garcia-Donato et al. *To appear in Bayesian Analysis.* (A07).

Kucharský Š., Mishra A., Habermann D., Radev S. T., **Bürkner P. C. (2025**). Towards Trustworthy Amortized Bayesian Model Comparison. *To appear in NeurIPS Workshop on Reliable Machine Learning from Unreliable Data*. Already available on OpenReview: https://openreview.net/pdf?id=6IMb0itvl0. (B04).

Ickstadt, K., Breitner-Busch, S., Conrad, A., Diekmann, A., Elmer, C., Felgendreher, S., Fried, R., Friedrich, S., Fuks, K., Groll, A., Hense, A., Hornberg, C., Küchenhoff, H., Leitgöb, H., Paetz, F., Radermacher, W. J., Schürz, S., Wolf, K. (2025). Beschleunigung umweltpolitischer Entscheidungen durch verlässliche Daten und effiziente statistische Methoden. *To appear in AStA Advances in Statistical Analysis.*
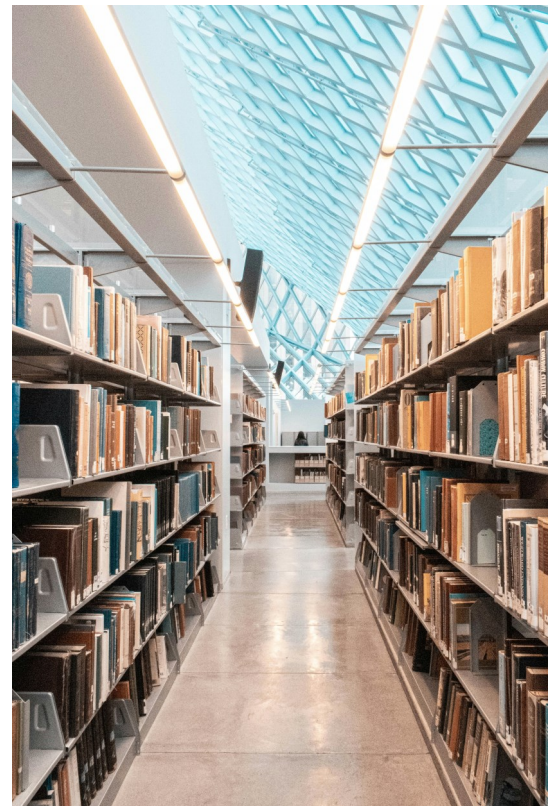
Peer-reviewed articles (published)

Bai, L., Wu, W. (2025). Uniform variance reduced simultaneous inference of time-varying correlation networks. *IEEE Transactions on Information Theory.* DOI: 10.1109/TIT.2025.3613143. (A03).

Dzikowski, D., Jentsch, C. (2025). Structural Periodic Vector Autoregressions. *Journal of Econometrics, 252, Part A, 106099*. DOI: 10.1016/j.jeconom.2025.106099. (C01).

Gierse, J., Fried, R. (2025). Nonparametric directional variogram estimation in the presence of outlier blocks. *Statistical Papers, 66, 134*. DOI: 10.1007/s00362-025-01754-2. (A04).

Golosnoy, V., Gribisch, B., Schmid, W., Seifert, M. I. (2025). Combining portfolio rules to improve prediction of global minimum variance portfolio weights. *The European Journal of Finance,* 1–18. DOI: 10.1080/1351847X.2025.2512107. (A04).

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Peer-reviewed articles (published)

Keweloh, S., A., Wang, S. (2025). Uncertain Short-Run Restrictions and Statistically Identified S tructural Vector Autoregressions. *Journal of Applied Econometrics, 1*–14. DOI: 10.1002/jae.70012. (C01).

Keweloh, S. A., Wang, S. (2025). Higher Moments and Efficiency Gains in Recursive Structural Vector Auto-regressions. *Oxford Bulletin of Economics and Statistics*, 1–9. DOI: 10.1111/obes.70008. (C01).

Kock, L., Klein, N., Nott, D. J. (2025). Deep Mixture of Linear Mixed Models for Complex Longitudinal Data. *Statistics in Medicine* 44, 23-24. e70288. DOI: 10.1002/sim.70288. (A07).

Seifert, M. I. (2025). Which distributions in the max-domain of attraction satisfy von Mises representation or variation representation for a given auxiliary function? *Extremes*. DOI: 10.1007/s10687-025-00516-5. (A04).

Working Papers

Aguilar J. E., Kohns D., Vehtari A., & Bürkner P. C. (2025). R2 priors for Grouped Variance Decomposition in High-dimensional Regression. *arXiv*. DOI: 10.48550/arXiv.2507.11833. (B04).

Bai, L., Dette, H. (2025). Measuring deviations from spherical symmetry. *arXiv.* DOI: 10.48550/arXiv.2510.18598. (A03).

Bastian, P., Dette, H., Dunsche, M. (2025). Differentially private testing for relevant dependencies in high dimensions. *arXiv*. DOI: 10.48550/arXiv.2511.17167. (A03, A07).

Bastian, P., Kutta, T., Basu, R., Dette, H. (2025). Monitoring Time Series for Relevant Changes. *arXiv.* DOI: 10.48550/arXiv.2509.01756. (A03).

Dette, H., Kühnert, S. (2025). Pivotal inference for linear predictions in stationary processes. *arXiv.* DOI: 10.48550/arXiv.2508.21025. (A03).

Hoenow, C., Helmers, V., Yang, E. (2025). Electric Bicycles and Public Transport Tickets: Ownership and Car Use Patterns. *TRR 391 Working Paper #7.* DOI: 10.17877/DE290R-25610. (C03).

Kutta, T., Dette, H., Wang, S. (2025). Multiscale Change Point Detection for Functional Time Series. *arXiv*. DOI: 10.48550/arXiv.2511.06870. (A03).

Lebedev, A., Das, A., Pappert, S., Schlüter, S. (2025). Analyzing Uncertainty Quantification in Statistical and Deep Learning Models for Probabilistic Electricity Price Forecasting. *arXiv.* DOI: 10.48550/arXiv.2509.19417. (C02).

Pappert, S. (2025). The Field Equations of Penalized non-Parametric Regression. *arXiv*. DOI: 10.48550/arXiv.2503.14763. (C02).

Quanz, P., Dette, H. (2025). Practically significant change points in high dimension - measuring signal strength pro active component. *arXiv.* DOI: 10.48550/arXiv.2508.21520. (A03).

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Talks

(ordered chronologically)

Conference Contributions

Lennard Maßmann (A06): Bayesian Causal Forests for Cost-Effectiveness Analysis. Conference Statistical Week 2025, Wiesbaden, Germany, September 2-5, 2025.

Karolina Gliszczynska (A06): Estimating Heterogeneous Causal Effects with Tree-Based Methods under Imperfect Compliance and Overlap Violations. Conference Statistical Week 2025, Wiesbaden, Germany, September 2-5, 2025.

Fabian Schmidt (A06): Factor Extraction for Mixed Data Types. Conference Statistical Week 2025, Wiesbaden, Germany, September 2-5, 2025.

Jens Klenke (A06): Sparsity and Fusion Penalization in Large Vector Autoregressions. Conference Statistical Week 2025, Wiesbaden, Germany, September 2-5, 2025.

Christoph Hanck (A06, C01): Assessing Loss Preferences on the Basis of Noisy Forecast Errors. Conference Statistical Week 2025, Wiesbaden, Germany, September 2-5, 2025.

Daniel Dzikowski (C01): Sparsity and Fusion Penalization in Large Vector Autoregressions. Conference Statistical Week 2025, Wiesbaden, Germany, September 2-5, 2025.

Christian Schulz (A06): Testing growth vulnerabilities and macro-financial linkages. CFE-CMStatistics, London, Great Britain, December 13-15, 2025.

Ignacio Moreira-Lara (C01): Large Bayesian structural matrix autoregression. CFE-CMStatistics, London, Great Britain, December 13-15, 2025.

Paul Navas (A06): Constructing counterfactual distributions and instruments using conditional flow matching conditional flow matching. ICSDS, Sevilla, Spain, December 15-18, 2025.

Nadja Klein (A07): Bayesian Meta-Learning for modeling disease progression based on high-dimensional MRI scans. ICSDS, Sevilla, Spain, December 15-18, 2025.

Nico Bianco (A07): Multi-resolution ensembles of predictive processes for fast, accurate, and robust spatial prediction accurate, and robust spatial prediction. ICSDS, Sevilla, Spain, December 15-18, 2025.

Talks in Research Seminars or Workshops

Nadja Klein (A07): Bayesian Deep Learning for Small Data. CRC 1597 Seminar Series, University of Freiburg, Germany, October 20, 2025.

Nadja Klein (A07): Bayesian Conditional Transformation Models. Department of Decision Sciences, Bocconi University, Milan, Italy, October 22-24, 2025.