



TRANSREGIO Express

Transregio 391-Newsletter, Edition No.5

Contents of this issue:

- ◆ [Greetings from TRR](#)
- ◆ [Honors, Scholarships and Awards](#)
- ◆ [Save the Dates](#)
- ◆ [Past Events](#)
- ◆ [TRR Research Seminar](#)
- ◆ [Miscellaneous](#)
- ◆ [TRR Publications](#)
- ◆ [Talks](#)

Dear colleagues and friends,

We are pleased to present the fifth issue of the TRR 391 Newsletter. Since our last edition, we have reached the middle of the first funding phase, and it is already clear that this period has been highly productive: many valuable insights have emerged, and our research is yielding a growing number of publications. In addition, the bibliography is now also available as a BibTeX file, making it even easier to keep track of our output.

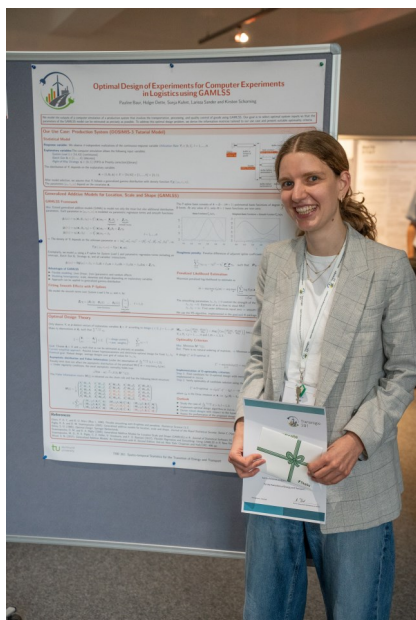
A particular highlight was our first TRR conference, which was a great success and featured many inspiring presentations and lively discussions. Thanks a lot to our invitees for their excellent talks, to you for your valuable contributions, and to our organizing team Jonas, Julia and Jenni for all their work!

We hope you enjoy reading this newsletter and learning more about the many activities and achievements across TRR 391.

Best wishes,

Roland

Honors, Scholarships and Awards



We are happy to congratulate our TRR members Pauline Baur, Nadja Klein, Steffen Maletz and Sven Pappert for their outstanding achievements

Pauline Baur (A01) was awarded the Best Poster Award at the TRR 391 Conference 2026 for her poster *Optimal design of experiments for computer experiments in logistics using GAMLSS*, presented on June 11, 2026. Other contributors to the work presented in the poster include Holger Dette, Sonja Kuhnt, Larissa Sander, and Kirsten Schorning. Congratulations to all authors!

Nadja Klein was recognized in the [Women in ELLIS 2026](#) spotlight, celebrating her achievements, leadership, guidance, and innovation in the fields of AI and machine learning across Europe. Congratulations on this well-deserved recognition!



TRANSREGIO EXPRESS

page 2

We congratulate Steffen Maletz (A04) and Sven Pappert (C02) on completing their doctorates:

Steffen Maletz (2026). Double Generalized Linear Models for Spatio-Temporal Data: A Unified Modeling Framework.

“In my dissertation, I develop statistical models for spatio-temporal data that are not necessarily normally distributed, such as disease counts across regions. Building on double generalized linear models (DGLMs), I extended these models to capture not only the expected value, but also how the dispersion parameter varies across space and time. This makes them applicable to a wider range of real-world data. The models are implemented in the R package glmSTARMA, which is available on CRAN. Additionally, I developed methods to detect sudden, persistent shifts in the data.”

Sven Pappert (2026). Essays on Copula-Based and Non-Linear Modeling in Regression and Time Series Problems.

“In my dissertation, I analyze non-linear and copula-based statistical modeling. In particular, non-Markovian generalizations of copula-based time series models are investigated and the usage of copulas for modeling and forecasting multivariate time series is explored. Furthermore, theoretical properties of penalized risks in the non-parametric regression setting are derived.”

Save the Dates

Statistical Week 2026

On September 8–11, 2026, the [Statistical Week](#) will take place at the University of Duisburg-Essen. One of the main focus topics is Statistics and Renewable Energy, which is highly relevant to TRR 391. The local organizer of the conference is Christoph Hanck (A06, C01). We would also like to draw your attention to the tutorial [Python on HPC Clusters](#) (September 7, 2026 9:00 am - 5:30 pm) which is part of the Statistical Week. Registration can be completed with your conference registration.

Equal Opportunity (EO) Seminar

The Equal Opportunity Advisory Board has launched the new EO Seminar series. The first seminar took place on May 28, from 2 pm to 4 pm at TU Dortmund University. We welcomed two distinguished female scientists Prof. Yang Han from the University of Manchester (Department of Mathematics) and Prof. Chen Huang from Aarhus University (Department of Economics and Business Economics), who presented their current research and shared insights from their academic careers.



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In the second EO seminar on July 13, we welcomed (substitute) Prof. Klockmann from University of Kassel (Faculty of Mathematics and Natural Sciences) and Prof. Dörnemann from Aarhus University (Department of Mathematics). In addition to their scientific talks, they reflected on their experiences in obtaining tenured positions, discussed challenges and strategies for success, and offered perspectives on excellence in teaching and mentorship.



TRANSREGIO EXPRESS

page 3

Retreat 2026

The STAIRS & TRR [Retreat 2026](#) will take place at Hotel Seehof in Haltern am See from November 4 to 6. The format will follow last year's structure, a more detailed schedule will be available on our website by the end of September. Please register as soon as possible to ease our preparations. Registration will be open until 30.09.2026. For later registrations, attendance cannot be guaranteed. Registration for the retreat is now open.

Past Events

First TRR 391 Conference

Our first TRR 391 Conference (June 10–12, 2026) at the Umspannwerk in Recklinghausen gathered over 100 international researchers from the U.S., Canada, the U.K., the Netherlands, and Germany. Talks and posters covered advances in statistical methods and their applications in energy and transport. This conference series provides a platform to strengthen collaboration and pave the way for sustainable data-analytical solutions to key challenges posed by the transition of energy and transport. The venue, a museum and still operating transformer substation, provided a symbolic setting linking research with real-world infrastructure.

Please check our [website](#) for more information.



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TRANSREGIO EXPRESS

page 4

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 11 lecturers:



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Nikolaos Kourentzes, University of Skövde: Forecasting with temporal hierarchies: Why, how, and what to expect?

Sonja Greven, Humboldt-Universität zu Berlin: Principal component analysis in Bayes spaces for sparsely sampled density functions

Sibylle Braungardt, TU Dortmund University: Data and modelling needs for the energy transition in the buildings sector

Marc-Oliver Pohle, University of Wuppertal: Simultaneous inference bands for autocorrelations

Alexander Dürre, Leiden University: Depth conditioned functional curves

Timo Dimitriadis, Goethe University Frankfurt: Sequential comparison of predictive ability

Jan Ditzen, Free University of Bozen-Bolzano: My neighbour's neighbour is not my neighbour: Instrumentation and causality in spatial models

Valentin Bertsch, RUB Bochum: Long-term energy systems planning under (deep) uncertainty: The example of climate change uncertainty

Rossana Cavagnini, University Duisburg-Essen: Optimization and data analytics for energy-aware transportation systems

Aleksey Min, Technical University of Munich: Stationary vine copula models for multivariate time series

Fabian Mies, TU Delft: Multiscale p-values for change localization.

Most of the presentations are available at our Youtube channel [@TRR391-spatio-temporal](#).

For the winter semester, the following guests have already agreed to present their work: Samuel Rosa, Luca Rossini, Mathias Vetter, Alexandra Stadler, Nikolaus Umlauf,



TRANSREGIO EXPRESS

page 5

Miscellaneous

SAP

We would like to take this opportunity to remind you that the SAP system at TU Dortmund University will be migrated shortly. In the period leading up to and during the migration, no travel expense claims can be processed. The following applies:

- Travel expense reports from non-TU members (paper form) must be received by us in full by September 7, 2026, at the latest. Requests received after this date will be processed starting October 20.
- For TU-members, the SAP system will no longer accept business trip requests or travel expense reports after September 13, 2026.

New INF Knowledge Hub is now online

We are pleased to announce the launch of the [TRR 391 INF Knowledge Hub](#), a central online platform for discovering and accessing resources relevant to our TRR 391.

The Knowledge Hub brings together relevant NFDI consortia, datasets and data resources, as well as software packages and tools in one place. It is designed to make important research data and infrastructure easier to find, explore, and reuse across the TRR and beyond.

TRR 391 Bib file

We are happy to announce that we compiled a [TRR 391 Bib file](#) in Overleaf, from which you can easily copy Bib entries for simple citation. It also includes an overview of publications by project and by Topic Circle. Feel free to use the file for literature research or referencing in your papers whenever appropriate. We will update the file at the beginning of each month with the information available to us. As part of this process, we also update the publications listed on the website. When submitting publications for inclusion (via mail to trr391@statistik.tu-dortmund.de), please be sure to specify which project(s) and Topic Circle(s) they should be assigned to. The file is linked on our website and accessible also to people outside the TRR.

Souhir Ben Amor (C02) organized the Machine Learning in Energy and Finance Workshop, Stolberg, Germany, May 7–9, 2026.

Nadja Klein (A07) organized the Dagstuhl-Seminar 26212: Empowering Climate Science with Spatial AI, Schloss Dagstuhl – Leibniz Center for Informatics, Wadern, Germany, May 17-20, 2026.

Christine Müller (B01) acted as a member of the program committee of the 14th Workshop on Model-Oriented Design and Analysis (mODa14), Drongen, Belgium, June 14-19, 2026.

Nadja Klein (A07) will serve on the Scientific Committee of the MathSEE Symposium 2026: [Applications of Mathematical Methods](#), Karlsruhe, Germany, September 28–30, 2026.

Nadja Klein (A07) is organizing the workshop BAYST (A workshop on BAYesian STRuctural Learning) 2027, Karlsruhe, Germany, March 1–3, 2027. BAYST aims to bring together researchers working on Bayesian structural learning and related areas, fostering exchange between methodological and applied perspectives. Check out the [website](#).

In May and June 2026, **Rouven Michels** (INF) visited Prof. Dr. Achim Zeileis from the Department of Statistics at the University of Innsbruck. During the stay, he expanded his expertise in open-source software and worked on integrating hidden Markov models with distributional trees. The resulting modelling framework offers promising potential for applications within the TRR. The visit was partly funded by the TRR Travel Funds.



TRANSREGIO EXPRESS

page 6

Publications

Peer-reviewed Articles (Accepted)

Bai, L., Hu, Q., Wu, W. (2026). Inference for structural changes in nonstationary functional time series with partial measurement error. *To appear in Journal of the Royal Statistical Society Series B: Statistical Methodology*. (A03)

Bücher, A., Dette, H. (2026). 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](https://doi.org/10.48550/arXiv.2410.11418). (A07)

Pappert, S. (2026). Moving aggregate modified autoregressive copula-based time series models (MAGMAR-copulas). *To appear in Journal of Time Series Analysis*. Already available on arXiv. DOI: [10.48550/arXiv.2402.01491](https://doi.org/10.48550/arXiv.2402.01491). (C02)



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Peer-reviewed Articles (Published)

Dohme, H., Malcherczyk, D., Leckey, K., Müller, C. H. (2026). K-depth tests for testing simultaneously independence and other model assumptions in time series. *Communications in Statistics - Simulation and Computation* 55 (3), 657–675. DOI: [10.1080/03610918.2024.2413905](https://doi.org/10.1080/03610918.2024.2413905). (B01)

Golosnoy, V., Gribisch, B., Schmid, W., Seifert, M. I. (2026). Combining portfolio rules to improve prediction of global minimum variance portfolio weights. *The European Journal of Finance* 32 (4–6), 510–527. DOI: [10.1080/1351847X.2025.2512107](https://doi.org/10.1080/1351847X.2025.2512107). (A04)

Jakubzik, M. A., Müller, C. H. (2026). Asymptotics of minimum distance estimation for self-exciting load sharing point processes. *Statistical Papers* 67, 55. DOI: [10.1007/s00362-026-01834-x](https://doi.org/10.1007/s00362-026-01834-x). (B01)

Lederer, J., von Sachs, R. (2026). Simultaneous estimation of stable parameters for multiple autoregressive processes from datasets of nonuniform sizes. *Journal of Time Series Analysis* 47 (2), 345–363. DOI: [10.1111/jtsa.12806](https://doi.org/10.1111/jtsa.12806). (A02)

Lebedev, A., Das, A., Pappert, S., Schlüter, S. (2026). Analyzing uncertainty quantification in statistical and deep learning models for probabilistic electricity price forecasting. *IEEE Access* 14, 52162–52189. DOI: [10.1109/ACCESS.2026.3672716](https://doi.org/10.1109/ACCESS.2026.3672716). (C02)

Nowosad, J., Bonannella, C., Görgen, D., Jemeljanova, M., Kattenborn, T., Linnenbrink, J., Meyer, H., Nussbaum, M., Patelli, L., Simoes, R., Uuemaa, E. (2026). Navigating challenges in spatial machine learning: validation, uncertainty, algorithms, and reproducibility. *ERDKUNDE*. DOI: [10.3112/erdkunde.2026.04.01](https://doi.org/10.3112/erdkunde.2026.04.01). (A05)

Uniejewski, B., Ziel, F. (2026). The role of probabilistic load and renewable prediction in enhancing day-ahead electricity price forecasts. *Renewable Energy* 269, 125844. DOI: [10.1016/j.renene.2026.125844](https://doi.org/10.1016/j.renene.2026.125844). (C02)

Zimmermann, M., Ziel, F. (2026). Probabilistic load forecasting in Europe: Capturing meteorological, socio-economic and political risks. *Energy Economics* 159, 109375. DOI: [10.1016/j.eneco.2026.109375](https://doi.org/10.1016/j.eneco.2026.109375). (C02)



TRANSREGIO EXPRESS

page 7

Working Papers

Aue, A., Kühnert, S., Rice, G., VanderDoes, J. (2026). An operator-level ARCH model. arXiv. DOI: [10.48550/arXiv.2603.10272](https://doi.org/10.48550/arXiv.2603.10272). (A03)

Bai, L., Dette, H., Yuan, Z. (2026). Validating spatial-temporal separability for stationary processes. arXiv. DOI: [10.48550/arXiv.2603.26369](https://doi.org/10.48550/arXiv.2603.26369). (A03, A07)

Bai, L., Veitch, D., Wu, W., Zhang, W., Zhou, Z. (2026). Complex trend inference for high-dimensional piecewise locally stationary time series. arXiv. DOI: [10.48550/arXiv.2410.23706](https://doi.org/10.48550/arXiv.2410.23706). (A03)

Demetrescu, M., Hanck, C., Hoga, Y. (2026). A robust test for equal predictive accuracy. TRR 391 Working Paper #13. DOI: [10.17877/DE290R-26668.2](https://doi.org/10.17877/DE290R-26668.2). (A06)

Gierse, J., Fried, R. (2026). A robust nonparametric test for spatial isotropy in lattice data. arXiv. DOI: [10.48550/arXiv.2605.18030v1](https://doi.org/10.48550/arXiv.2605.18030v1). (A04)

Linnenbrink, J., Nowosad, J., Meyer, H. (2026). Moving beyond spatial and random cross-validation in environmental modelling: a call for prediction-domain adaptive evaluation. arXiv. DOI: [10.48550/arXiv.2605.13689](https://doi.org/10.48550/arXiv.2605.13689). (A05)

Maletz, S., Fokianos, K., Fried, R. (2026). glmSTARMA – An R-Package for fitting autoregressive spatio-temporal models following generalized linear models. DOI: [10.48550/arXiv.2607.08276](https://doi.org/10.48550/arXiv.2607.08276). (A04)

Pappert, S., Joe, H. (2026). Copula-based time series for non-Gaussian and non-Markovian stationary processes. arXiv. DOI: [10.48550/arXiv.2604.01500](https://doi.org/10.48550/arXiv.2604.01500). (C02)

Schmidt, F., Demetrescu, M. (2026). Fast factor extraction for mixed type financial data. TRR 391 Working Paper #11. DOI: [10.17877/DE290R-26653](https://doi.org/10.17877/DE290R-26653). (A06)

Schmidt, F. (2026). Factor-based IVX predictive regression. TRR 391 Working Paper #12. DOI: [10.17877/DE290R-26657](https://doi.org/10.17877/DE290R-26657). (A06)

Software

Maletz, S., Fokianos, K., Fried, R. (2026). glmSTARMA: (Double) Generalized Linear Models for Spatio-Temporal Data. DOI: [10.32614/CRAN.package.glmSTARMA](https://doi.org/10.32614/CRAN.package.glmSTARMA). (A04)

Talks

(ordered chronologically)

Keynotes and Invited Talks

Christine Müller (B01): Robust regression and data depth – a personal review. International Workshop on Mathematical Statistics (IWMS 2026), Smolenice, Slovakia, June 1, 2026.

Carsten Jentsch (A03, C01): Subgraph counts for hypergraphons with node covariates: Asymptotic and bootstrap inference. Hajek Statistical Days 2026, Prague, Czech Republic, June 6, 2026.

Justin Lamberti (A01): Optimal designs for large time-dependent networks (DPP). 14th Workshop on Model-Oriented Design and Analysis (mODa14), Drongen, Belgium, June 18, 2026.

Christine Müller (B01): Optimal designs for the Kalman filter applied to electrical power distribution grids. 14th Workshop on Model-Oriented Design and Analysis (mODa14), Drongen, Belgium, June 18, 2026.



TRANSREGIO EXPRESS

page 8

Keynotes and Invited Talks

Carsten Jentsch (A03, C01): Global estimation in time-varying environments: Some asymptotic and bootstrap (in) consistency results. Recent Advances in Time Series Analysis, Larnaca, Cyprus, June 19, 2026.

Nadja Klein (A07): Bayesian additive regression tree copula processes for scalable distributional prediction. International Symposium on Nonparametric Statistics (ISNPS 2026), Thessaloniki, Greece, June 23, 2026

Carsten Jentsch (A03, C01): Subgraph counts for hypergraphons with node covariates: Asymptotic and bootstrap inference. International Symposium on Nonparametric Statistics (ISNPS 2026), Thessaloniki, Greece, June 25, 2026.

Nadja Klein (A07): Bayesian additive regression tree copula processes for scalable distributional prediction. ISBA 2026 World Meeting, Nagoya, Japan, July 1, 2026



Conference and Workshop Contributions

Darius Görden (A05): Area of applicability for deep learning: Exploring latent space geometry of earth observation models. EGU General Assembly 2026, Wien, Austria, May 6, 2026.

Fabian Schmidt (A06): Fast factor extraction for mixed data types. 7th Vienna Workshop on High Dimensional Time Series in Macroeconomics and Finance, Wien, Austria, May 27, 2026.

Fabian Schmidt (A06): Fast factor extraction for mixed data types. Quantitative Finance and Financial Econometrics (QFFE) 2026, Marseille, France, June 4, 2026.

Pauline Baur (A01): Optimal designs for nonlinear regression with dependent errors using matrix norms. 14th Workshop on Model-Oriented Design and Analysis (mODa14), Drongen, Belgium, June 15, 2026.

Robin Solinus (A01): Optimal design for spatio-temporal stochastic processes. 14th Workshop on Model-Oriented Design and Analysis (mODa14), Drongen, Belgium, June 16, 2026.

Antonio Fioravanti (A03): Nonparametric covariance estimation with bias correction for lattice processes. International Symposium on Nonparametric Statistics (ISNPS 2026), Thessaloniki, Greece, June 23, 2026.

Nicolas Bianco (A07): Scalable and robust spatial prediction via multi-resolution ensembles of predictive processes. ISBA 2026 World Meeting, Nagoya, Japan, July 1, 2026.

Talks in Research Seminars and Organized Workshops

Florian Ziel (C02): Recent challenges in electricity price forecasting. Mathematical Finance Seminar, Center for Mathematical Economics, Bielefeld University, Bielefeld, Germany, April 22, 2026.

Matei Demetrescu (A06): A robust test for equal predictive accuracy. A&E Seminar, Department of Economics, Universidad Carlos III de Madrid, Madrid, Spain, May 4, 2026.

Carsten Jentsch (A03, C01): Bootstrap inference in panels of cointegrating regressions with global stochastic trends. Research Seminar of Institute of Economics and Econometrics, University of Regensburg, Regensburg, Germany, May 11, 2026.