

29th August 2024

CURRICULUM VITAE

Name: **OSTAP OKHRIN**

Address: Chair of Statistics and Econometrics esp.
Transportation
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Photo: Axel Stephan, Hochschulverband

Birth date and place: May 23, 1984; Lviv, Ukraine
 Marital status: married to Dr. Iryna Okhrin since Sep. 2007
 (daughter born in Dec. 2011, son born in Jun. 2013)
 Citizenship: German

Languages native Ukrainian, fluent in English, German, some Polish

PROFESSIONAL POSITIONS – WERDEGANG

- 2022 – Member of the Review Board (Fachkollegiat) of DFG
(Deutsche Forschungsgemeinschaft, German Science Foundation)
407-04 Traffic and Transport Systems, Intelligent and Automated Traffic
- 2021 – Member of the Board of DStatG
(Deutsche Statistische Gesellschaft, German Statistical Society)
- Mar. 2015 – *Professor (W3)* of Statistics and Econometrics esp. Transportation,
Faculty of Transportation,
Technische Universität Dresden, Germany
- Apr. 2014 – Feb. 2015 *Associate Professor (W2)* at the Chair of Statistics,
Humboldt-Universität zu Berlin, Germany
- Apr. 2008 – Mar. 2014 *Assistant Professor (W1)* at the Chair of Statistics,
Humboldt-Universität zu Berlin, Germany
- Feb. 2006 – Mar. 2008 *Research Fellow* at the Department of Statistics,
European University Viadrina, Frankfurt (Oder), Germany

EDUCATION – AUSBILDUNG

- Feb. 2008 Ph.D. in Economics with *summa cum laude*
European University Viadrina, Frankfurt (Oder), Germany
Title: "*Hierarchical Archimedean Copula: Structure Determination, Properties, Applications*"
Supervisor: Prof. Dr. Wolfgang Schmid
- June 2005 M.Sc. in Statistics with *summa cum laude*
Ivan Franko National University of Lviv, Ukraine
Title: "*Asymptotic behavior of the S-stopped branching processes with the countable number of types of particles*"
Supervisor: Prof. Dr. Yaroslav Yeleyko
- June 2004 Bachelor in Mathematics
Ivan Franko National University of Lviv, Ukraine
Supervisor: Prof. Dr. Yaroslav Yeleyko
- June 2000 Lviv Academic Gymnasium, Ukraine

TEACHING – LEHRE

Undergraduate level

Statistics I (tutorials (SS 07, 08) and lectures (SS 09–11, 14–), in German/English)
Statistics II (tutorials (WS07/08) and lectures (WS08/09, WS15/16–), in German)
Investments (tutorials (SS05), in Ukrainian)

Master level (lectures in English)

Statistics of Financial Markets I (WS10/11)
Statistics of Financial Markets II (SS11, 13)
Multivariate Statistical Analysis I (WS 09/10, 10/11, 12/13, 14/15, 15/16, SS 16–)
Multivariate Statistical Analysis II (Applied Multivariate Statistics, SS08, 13–)
Data-Driven Statistics (WiSe17/18–)
Statistical Programming Languages (SS09, SS19–)
Financial Econometrics (SS14)

PhD Level (lectures in English)

Statistical Tools in Finance and Insurance (WS 08/09, 09/10 (Socrates Program for lecturers in Wroclaw, Poland), WS11/12, WS 13/14)
Selected Topics of Mathematical Statistics (WS 11/12–14/15)

PROF. ACTIVITIES – BERUFL. TÄTIGKEITEN

TEDx Dresden talk: "*How Statistics Supports our Intuition*" (<https://youtu.be/V3fSVFcp850>)

Head of the sub/projects

2023–2024 "*Deep Understanding of Driving Behaviour in Lane Free Mixed Traffic to Optimize its Efficiency*", SPARC – Scheme for Promotion of Academic and Research Collaboration (50K Euro,

Indian PI V. Kanagaraj, G. Asaithambi, German Co-PI M. Treiber)
 2023–2026 “Further development of the traffic simulation PERSIST – PERSIST+”, BAW (The Federal Waterways Engineering and Research Institute, 257K Euro)
 2023–2026 “Conceptual preparation for the model-based testing of hydraulic options to ensure reliably calculable transport conditions on the Rhine during low water - NWRhine”, BAW (The Federal Waterways Engineering and Research Institute, 505K Euro)
 2022–2025 “Realized Higher Moments and Realized Distributional Forecasts – ReaDi”, DFG (German Science Foundation, 225K Euro)
 2021–2024 “Enhancing Traffic Flow understanding by Two-Dimensional Microscopic Models – ETF2D”, DFG (with M. Treiber, 320K Euro)
 2019–2023 “Program to Extend Research and Simulation of Inland Ship Traffic – PERSIST”, BAW (The Federal Waterways Engineering and Research Institute, 450K Euro)
 2018–2021 as co-PI for “Optimierte Continuous Descent Operations unter unsicheren Umwelt- und Missionsbedingungen” DFG, (German Science Foundation, PI Prof. Fricke, 500K Euro)
 2016 great!ipid4all through DAAD with Prof. Dr. Durante (Uni Bolzano, Italy)
 2016 Dresdner Senior Fellowship for Prof. Peter X.-K. Song, PhD (University of Michigan, USA)
 2013–2015 Project “Copulae” in IRTG 1792 “High Dimensional Non Stationary Time Series”
 2011–2012 “Development of the Dynamic Marketmodell – F249”, DTelekom (50K Euro)
 2008–2015 “Copulae in Finance” in the C.A.S.E. – Center for Applied Statistics and Economics
 2008–2016 B10: “Dynamic Copula Models” in the CRC 649, DFG (German Science Foundation, 150K Euro)

Co-Editor with M. Massmann of the “SpringerBriefs in Applied Statistics and Econometrics”,
<https://www.springer.com/series/16080>

Awards:

2021 Teaching Prize for “Statistik 1” course by the Association of Friends and Sponsors of TU Dresden

Associate Editor

2024– *Journal of Multivariate Analysis*
 2019– *Digital Finance*
 2010– *AStA Advances in Statistical Analysis*
 2011– *Computational Statistics*
 2015–2020 Editorial Review Board of *Frontiers in Applied Mathematics and Statistics*
 2015– Editorial Board of *Dependence Modeling*

Guest Editor of Special Issues

“Copula Modeling from Abe Sklar to the present day” in *Journal of Multivariate Analysis* (with Ch. Genest and T. Bodnar), 2022
 “High-Dimensional and Multivariate Statistical Inference” in *Theory of Probability and Mathematical Statistics* (with T. Bodnar), 2022
 “Applicable Semiparametrics” in *Computational Statistics* (with S. Trück), 2015
 “Copulae” in *Statistics and Risk Modeling*, 2013

Self-administration

2022– Member of the Advisory Board of the Rectorate in Research (Forschungsbeirat), TUD
 2022– Chairman of the Board of Examiners at the Faculty of Transportation (Prüfungsausschussvorsitzender), TUD
 2020– Member of the Doctoral Committee (Promotionsausschuss), TUD

2017– Coordinator cooperation TU Dresden - SWUFE, Chengdu, China
 2016–2018 Member of the Faculty Board (Fakultätsrat), TUD
 2016– Representative of the Faculty in the Internationalization Work Group, TUD
 2011–2014 Head of the Local Electoral Board in School of Business and Economics, HUB
 2013–2015 Coordinator cooperation HU Berlin - ENSAE Paris, ENSAI Rennes

Co-organizer of the

Conference on Reinforcement Learning, TUD, September 2022
 Statistische Woche 2020, TUD, March, 2020 (online due to COVID-19)
 Stochastik Tage 2020, TUD, March, 2020 (cancelled due to COVID-19)
 Operations Research 2019, TUD, September, 2019
 Statistical Bazar at DAGStat Conference, Munich, March 2019
 2016, 2018 Session at CFE-CMStatistics
 Co-responsible for Nachwuchsworkshops at Statistische Woche 2014–
 Workshop on “*Stochastic Models, Statistics and their Application*”, TUD, March, 2019
 Workshop on “*Integration of Transportation, Statistics and Big Data*”, TUD, July, 2017
 Workshop on “*Big Data in Transport Management*” with J. Schönberger, TUD, June, 2017
 Workshop on “*Applied Statistics*”, Dresden, March, 2016
 Dresden-Berlin Workshop on “*High-Dim. of Transport and Digital Economy*”, TUD, October, 2015
 Humboldt-Princeton Conference, Princeton, USA, November 2013
 Section on “*Copulae*” in “*Applicable Semiparametrics*”, Berlin, Germany, October 2013
 Section on “*Statistics in Finance, Insurance and Banking*” in “*DAGStat 2013*”, Freiburg, Germany
Copulae in Mathematical and Quantitative Finance, Cracow, Poland, July 2012
Märkische Schweiz Summer School on Statistics in Finance and Insurance, Berlin, May 2012
 Section on “*Finanzstatistik*” in “*Statistische Woche 2011*”, Leipzig, Germany
 C.A.S.E. Distinguished Lecture Series 2011, Berlin, January 2011
 Workshop on “*Copulae: Theory and Practice*”, Berlin, December 2007
 4th All-Ukr. “*Theor. and Appl. Aspects of the Analysis of the Fin. Systems*”, Lviv, May 2005
 3rd All-Ukrainian Scientific Conference for Graduate and Postgraduate, Lviv, Ukraine, April 2004

(External) advisor in selection committees

Professorship (W2) in Quantitative Methods, esp. Econometrics (with TT on W2), 2022, TUD, DE
Professorship (W2) in Big Data Analytics in Transportation (with TT on W3), 2020, TUD, DE
Assistant Professorship in Economic Statistics SECS-S/03, 2017, University Bozen/Bolzano, IT
Assistant Professorship in Quantitative Agrarökonomie, 2015, HU Berlin, DE

Scientific Committee of the

International Workshop on Computational Intelligence and Data Mining (WCIDM) 2016–, Slovakia
FEMIB2020– International Conferences on Finance Economics, Management and IT Business,
 Prague, Czech Republic
Copulae in Mathematical and Quantitative Finance, Crakow, Poland, July 2012
Humboldt-Copenhagen Conference, Berlin, Germany, March 2009

Member of the

2010-2015, BDPEMS – Berlin Doctoral Program in Economics & Management Science
 2009-2015, commission of the *Master of Science in Statistics* (www.stat.de)
Verein für Socialpolitik – Ausschuss Ökonometrie, Hochschulverband (2008-2018), *Deutsche Statistische Gesellschaft*, *Econometric Society*, *Society of Financial Econometrics*

Referee

Econometrica, Journal of Econometrics, Journal of Applied Econometrics, Journal of the American Statistical Association, Journal of Business & Economic Statistics, Bernoulli, Journal of Multivariate Analysis, Transportation Research Series A, Statistics, Communications in Statistics - Theory and Methods, Quantitative Finance, Computational Statistics and Data Analysis, Journal of Time Series Analysis, Electronic Journal of Statistics, Nonlinear Analysis, Journal of Banking and Finance, etc.

Packages for R:

- cran.r-project.org/web/packages/HAC with A. Ristig, M. Waltz
- cran.r-project.org/web/packages/gofCopula with S. Trimborn, M. Waltz

PhD STUDENTS – NACHWUCHS**First advisor:**

Martin Waltz (TUD), *“Essays in deep reinforcement learning with application to path planning and control of autonomous vehicles”*, expected 2024, Second Advisor: Carlo D’Eramo

Fabian Hart (TUD), *“Robustness of reinforcement learning based autonomous driving technologies”*, expected 2024, Second Advisor: Martin Treiber, First job: Data Scientist at Green Fusion

Gong Chen (TUD), *“Statistics in Air Transportation”*, expected 2024, Second Advisor: Hartmut Fricke

Manuel Schmid (TUD), *“The role of the higher moments in high-frequency data modelling”*, 27.10.2021, Second Advisor: Michael Rockinger, First job: KPMG

Stefanie Lösch (TUD), *“Environmental Awareness and Labour Market Tightness”*, 30.11.2020, Second Advisor: Bernhard Schipp, First job: aifinyo AG

Ya-Fei Xu (HU Berlin), *“High dimensional quantitative finance: dependence modeling and online surveillance”*, 01.02.2018, Second Advisor: Bernd Droge, First job: Data Scientist at TAL

Alexander Ristig (HU Berlin), *“High-Dimensional Time Series”*, 14.06.2015, Second advisor: Wolfgang K. Härdle, First job: PostDoc, Department of Statistics and Operations Research, University of Vienna.

Second advisor:

Hiroki Watanabe (TUD), *“Methodik zur Determinierung repräsentativer und relevanter Testszenarien für prädiktive Sicherheitsfunktionen”*, 22.03.2022, First advisor: Günther Prokop

Nicolas Frölich (TUD), *“Multiple Breakpoint Estimation for Structural Changes in Bernoulli Mixture Models with Application in Credit Risk”*, 02.09.2021, First advisor: Bernhard Schipp

Anastasija Teterewa (Uni. St. Gallen), *“Essays on Multivariate Modelling of Financial Markets Using Copula and Sentiment Networks”*, 19.04.2018, First advisor: Francesco Audrino

Benjamin Poignard (Dauphine Universite Paris), *“Approches nouvelles des modèles GARCH multivariés en grande dimension”*, 15.06.2018, First advisor: Jean-David Fermanian

Stephan Stahlschmidt (HU Berlin), *Towards Causal Reasoning: Notes on Dimension Reduction, Graphical Models and Treatment Effects*, 12.12.2014, First advisor: Wolfgang K. Härdle

Zhiwei Shen (HU Berlin), *Challenges of Index-based Insurance in Agriculture*, 05.09.2014, First advisor: Martin Odening

Barbara Chorós-Tomczyk (HU Berlin), *"Copula Dynamics in Collateralized Debt Obligations"*, 14.08.2013, First advisor: Wolfgang K. Härdle

Elena Silyakova (HU Berlin), *Modelling Implied Correlation Dynamics*, 29.04.2013, First advisor: Wolfgang K. Härdle

Roman Timofeev (HU Berlin), *"Statistical Aspects of Stock Pricing and Risk Averse Behavior"*, 27.08.2010, First advisor: Wolfgang K. Härdle

Uwe Ziegenhagen (HU Berlin), *"Essays on the use of e-Learning in statistics and the implementation of statistical software"*, 20.03.2009, First advisor: Wolfgang K. Härdle

BOOKS – BÜCHER

Hierarchical Archimedean Copulas, *Springer*, 2024, Softcover ISBN: 978-3-031-56336-2, eBook ISBN: 978-3-031-56337-9 (with J. Górecki)

Stochastic Models, Statistics and Their Applications, *Springer*, 2017, Hardcover ISBN: 978-3-319-55335-1, eBook ISBN: 978-3-030-28664-4 (with A. Steland, E. Rafajlowicz, eds)

Basic Elements of Computational Statistics, *Springer*, 2017, Hardcover ISBN: 978-3-319-55335-1, eBook ISBN: 978-3-319-55336-8 (with W. K. Härdle, Y. Okhrin)

REFEREED PUBLICATIONS – REFERIERTE PUBLIKATIONEN

1. An open-source framework for data-driven trajectory extraction from AIS data - the α -method, to appear in **Ocean Engineering** (with N. Paulig)
2. Addressing maximization bias in reinforcement learning with two-sample testing, **Artificial Intelligence**, 336, 104204, DOI: 10.1016/j.artint.2024.104204 (with M. Waltz)
3. Two-step dynamic obstacle avoidance, **Knowledge-Based Systems**, 302, 112402, DOI: 10.1016/j.knosys.2024.112402 (with F. Hart and M. Waltz)
4. Data-driven determination of plant growth stages for improved weather index insurance design, to appear in **Agricultural Finance Review**, DOI: 10.1108/AFR-01-2024-0015 (with J. Zou and M. Odening)
5. Self-organized free-flight arrival for urban air mobility, **Transportation Research Part C: Emerging Technologies**, 168, 104806, DOI: 10.1016/j.trc.2024.104806 (with M. Waltz and M. Schultz)
6. Artificial neural network small-sample-bias-corrections of the AR(1) parameter close to unit root, **Statistica Neerlandica**, 1-31, 2024, DOI: 10.1111/stan.12354 (with H. Jiang and M. Rockinger)
7. Robust path following on rivers using bootstrapped reinforcement learning, **Ocean Engineering**, 298, 117207, 2024, (with N. Paulig) DOI: 10.1016/j.oceaneng.2024.117207
8. Towards robust car-following based on deep reinforcement learning, **Transportation Research Part C: Emerging Technologies**, 104486, 2024 (with F. Hart and M. Treiber), DOI: 10.1016/j.trc.2024.104486
9. Enhanced method for reinforcement learning based dynamic obstacle avoidance by assessment of collision risk, **Neurocomputing**, 127097, 2024 (with F. Hart), DOI: 10.1016/j.neucom.2023.127097

10. Flight delay propagation inference in air transport networks using the multilayer perceptron, **Journal of Air Transport Management**, 102510, 2024 (with G. Chen, H. Fricke, and, J. Rosenow), DOI: 10.1016/j.jairtraman.2023.102510
11. Penalized estimation of hierarchical Archimedean copula, **Journal of Multivariate Analysis**, 105274, 2023 (with A. Ristig), DOI: 10.1016/j.jmva.2023.105274
12. Preface to the Special Issue “Copula modeling from Abe Sklar to the present day”, **Journal of Multivariate Analysis**, 105280, 2023 (with Ch. Genest and T. Bodnar), DOI: 10.1016/j.jmva.2023.105280
13. Copula modeling from Abe Sklar to the present day, **Journal of Multivariate Analysis**, 105278, 2023 (with Ch. Genest and T. Bodnar), DOI: 10.1016/j.jmva.2023.105278
14. Plant Growth Stages and Weather Index Insurance Design, **Annals of Actuarial Science**, Volume 17, Issue 3, 2023, pp. 438–458 (with M. Odening and J. Zou), DOI: 10.1017/S1748499523000167
15. Spatial–temporal recurrent reinforcement learning for autonomous ships, **Neural Networks** 165, 2023, pp. 634–653 (with M. Waltz), DOI: 10.1016/j.neunet.2023.06.015
16. Vessel-following model for inland waterways based on deep reinforcement learning, **Ocean Engineering** 281, 2023, 114679 (with F. Hart and M. Treiber), DOI: 10.1016/j.oceaneng.2023.114679
17. Modified DDPG car-following model with a real-world human driving experience with CARLA simulator, **Transportation Research Part C: Emerging Technologies** 146, 2023, 103987 (with D. Li), DOI: 10.1016/j.trc.2022.103987
18. Semiparametric estimation of the high-dimensional elliptical distribution, **Journal of Multivariate Analysis**, 105142, 2022 (with E. Liebscher), DOI: 10.1016/j.jmva.2022.105142
19. Labor market tightness and individual wage growth: evidence from Germany, **Journal for Labour Market Research**, 2022, 56:16 (with S. Brunow and S. Lössch), DOI: 10.1186/s12651-022-00322-7
20. Simulating the CIR and Heston Processes: Matching the First Four Moments, **Journal of Computational Finance**, 2022, (with M. Rockinger and M. Schmid), DOI: 10.21314/JCF.2022.022
21. Distributional properties of continuous time processes: from CIR to Bates, **ASTA Advances in Statistical Analysis**, 2022, (with M. Rockinger and M. Schmid), DOI: 10.1007/s10182-022-00459-3
22. Maximum-Likelihood Estimation Using the Zig-Zag Algorithm, **Journal of Financial Econometrics**, 2022, 1–30, (with N. Hautsch and A. Ristig), DOI: 10.1093/jjfinec/nbac006
23. Vulnerability-CoVaR: investigating the cryptomarket, **Quantitative Finance**, 2022, (with M. Waltz and A. K. Singh), DOI: 10.1080/14697688.2022.2063166
24. Importance of Weather Conditions in a Flight Corridor, **Stats** 5, 2022, pp. 312–338, (with G. Chen, H. Fricke, and J. Rosenow), DOI: 10.3390/stats5010018
25. What Threatens Stock Markets More - the Coronavirus or the Hype Around it?, **International Review of Economics and Finance** 78, 2022, pp. 519–539, (with A. Nepp, J. Egorova, Z. Dzhuraeva, A. Zykov)
26. Optimization of Wiedemann-99 Model Parameters for Mixed Traffic Using Vehicular Trajectory Data, **Transportation Research Record**, (with A. Chaudhari, K. Srinivasan, B. Chilukuri and M. Treiber), 2021, DOI: 10.1177/036119812111037543
27. gofCopula: Goodness-of-Fit tests for copulae, **R Journal** 13:1, 2021, 467–498, DOI: 10.32614/RJ-2021-060 (with S. Trimborn and M. Waltz)

28. Infinitely Stochastic Micro Reserving, **Insurance: Mathematics and Economics** 100, 2021, DOI: 10.1016/j.insmatheco.2021.04.007 (with M. Maciak and M. Pešta)
29. Copulae: An Overview and Recent Developments, **WIREs Computational Statistics** e1557, 2021 DOI: 10.1002/wics.1557 (with J. Gröber)
30. Outer power transformations of hierarchical Archimedean copulas: Construction, sampling and estimation, **Computational Statistics and Data Analysis**, 155, 2021, DOI: 10.1016/j.csda.2020.107109 (with J. Gorecki and M. Hofert)
31. Statistical modeling of the required space for inland vessels, **Communications in Statistics** 6(2), 2020, pp. 167–190, DOI: 10.1080/23737484.2020.1746934 (with N. Fischer)
32. Optimal Shrinkage Estimator for High-Dimensional Mean Vector, **Journal of Multivariate Analysis** 170, 2019, pp. 63-79, DOI: 10.1016/j.jmva.2018.07.004, (with T. Bodnar and N. Parolya)
33. Flexible HAR Model for Realized Volatility, **Studies in Nonlinear Dynamics & Econometrics** 23(3), 2019, DOI: 10.1515/snde-2017-0080 (with F. Audrino and C. Huang)
34. Index of Environmental Awareness through MIMIC Approach, **Papers in Regional Science**, 98, 2019, pp. 1419-1441, DOI: 10.1111/pirs.12420 (with D. Khakimova, S. Lösch, D. Wende, H. Wiesmeth)
35. Awareness of Climate Change: Difference Among Russian Regions, **Area Development and Policy** 4(3), 2019, pp. 284-307, DOI: 10.1080/23792949.2018.1514982 (with S. Lösch and H. Wiesmeth)
36. Optimal Pension System: Case Study, **Economics & Sociology** 11(1), 2018, pp. 267–292, DOI: 10.14254/2071-789X.2018/11-1/18 (with A. Nepp, V. Larionova, A. Sesekin)
37. Adaptive local parametric estimation of crop yields: Implications for crop insurance ratemaking, **European Review of Agricultural Economics** 45(2), 2018, pp. 173–203, DOI: 10.1093/erae/jbx028 (with Z. Shen and M. Odening)
38. Qui se ressemblent s'assemblent, **Accromath**, 13 (1), 2018, pp. 14-19 (with C. Genest and J.-F. Plante)
39. A Comparison Study of Pricing Credit Default Swap Index Tranches with Convex Combination of Copulae, **The North American Journal of Economics and Finance** 42, 2017, pp. 193–217, DOI: 10.1016/j.najef.2017.07.004 (with Y.-F. Xu)
40. The realized hierarchical Archimedean copula in risk modelling, **Econometrics** 5(2), 26, 2017, DOI: 10.3390/econometrics5020026 (with A. Teterova)
41. Localising temperature risk, **Journal of the American Statistical Association**, 111 (516), 2016, pp. 1491–1508, DOI: 10.1080/01621459.2016.1180985 (with W. K. Härdle, B. López Cabrera, W. Wang)
42. Goodness-of-fit Test For Specification of Semiparametric Copula Dependence Models, **Journal of Econometrics**, 193, 2016, pp. 215-233, DOI: 10.1016/j.jeconom.2016.02.017 (with S. Zhang, Q. M. Zhou and P. X.-K. Song)
43. Managing Risk with a Realized Copula Parameter, **Computational Statistics and Data Analysis**, 100, 2016, pp. 131–152, DOI: 10.1016/j.csda.2014.07.011 (with M. R. Fengler).
44. A Semiparametric Factor Model for CDO Surfaces Dynamics, **Journal of Multivariate Analysis**, 146, 2016, pp. 151–163, DOI: 10.1016/j.jmva.2015.09.002 (with W. K. Härdle and B. Choroś-Tomczyk)

45. Can expert knowledge compensate for data scarcity in crop insurance pricing?, **European Review of Agricultural Economics**, 43(2), 2016, pp. 237–269, DOI: 10.1093/erae/jbv015 (with M. Odening and Z. Shen)
46. Lévy copulae for financial returns, **Dependence Modeling**, 4, 2016, pp. 288–305, DOI: 10.1515/demo-2016-0017
47. Hidden Markov structures for dynamic copulae, **Econometric Theory** 31(5), 2015, pp 981–1015, DOI: 10.1017/S0266466614000607 (with W. K. Härdle, W. Wang)
48. Editorial to the special issue on “Applicable Semiparametrics” of Computational Statistics, **Computational Statistics** 30(3), pp 641–646, 2015, DOI: 10.1007/s00180-015-0616-4 (with S. Trueck).
49. Modelling spatiotemporal variability of temperature, **Computational Statistics** 30(3), 2015, pp 745–766, DOI: 10.1007/s00180-015-0561-2 (with X. Cao, M. Odening and M. Ritter)
50. Estimation procedures for exchangeable Marshall copulas with hydrological application, **Stochastic Environmental Research and Risk Assessment** 29, 2015, pp 205–226, DOI: 10.1007/s00477-014-0866-7 (with F. Durante) (IF 1.961).
51. Hierarchical Archimedean Copulae: The HAC Package, **Journal of Statistical Software** 58(4), 2014, pp 1–20, (with A. Ristig) (IF 2.647, <http://www.jstatsoft.org/v58/i04>)
52. Conditional Least Squares and Copulae in Claims Reserving for a Single Line of Business, **Insurance: Mathematics and Economics** 56, 2014, pp 28–37, DOI: 10.1016/j.insmatheco.2014.02.007 (with M. Pešta)
53. Modelling general dependence between commodity forward curves, **Energy Economics** 43, 2014, pp 284–296, DOI: 10.1016/j.eneco.2014.02.019 (with M. Zolotko)
54. Determining the structure and estimation of hierarchical Archimedean copulas, **Journal of Econometrics** 173 (2), 2013, pp 189–204, DOI: 10.1016/j.jeconom.2012.12.001 (with Y. Okhrin and W. Schmid)
55. Editorial to the special issue on Copulae of Statistics & Risk Modeling, **Statistics and Risk Modeling** (former Statistics and Decisions), 30(4), 2013, pp 281–286, DOI: 10.1524/strm.2013.9014.
56. Dynamic Structured Copula Models, **Statistics and Risk Modeling** (former Statistics and Decisions), 30(4), 2013, pp 361–388, DOI: 10.1524/strm.2013.2004 (with W. K. Härdle, Y. Okhrin)
57. Valuation of Collateralized Debt Obligations with Hierarchical Archimedean Copulae, **Journal of Empirical Finance** 24, 2013, pp 42–62, DOI: 10.1016/j.jempfin.2013.08.001 (with W. K. Härdle and B. Choroś-Tomczyk)
58. Properties of hierarchical Archimedean copulas, **Statistics and Risk Modeling** (former Statistics and Decisions) 30 (1), 2013, pp 21–53, DOI: 10.1524/strm.2012.1071 (with Y. Okhrin and W. Schmid)
59. Systemic Weather Risk and Crop Insurance: The Case of China, **Journal of Risk and Insurance** 80(2), 2013, pp 351–372, DOI: 10.1111/j.1539-6975.2012.01476.x (with M. Odening and W. Xu)
60. On the Generating Functional of the special case of S -Stopped Branching Processes, **Visn. L'viv. Univ., Ser. Mekh.-Mat. (Bulletin of the Lviv University)**, Series in Mechanics and Mathematics: 74, 2011, pp. 157–167 (preprint available at <http://arxiv.org/abs/1108.1675>)
61. On the Systemic Nature of Weather Risk. **Agricultural Finance Review**: 70(2), 2010, pp. 267–284 (with M. Odening, G. Filler and W. Xu).

62. De copulis non est disputandum, **AStA - Advances in Statistical Analysis**: 94(1), 2010, pp. 1-31 (with W. K. Härdle)
63. Asymptotic behavior of the S -stopped branching processes with countable state space, **Visn. L'viv. Univ., Ser. Mekh.-Mat. (Bulletin of the Lviv University), Series in Mechanics and Mathematics**: 67, 2007, pp. 119-129. (with Y. Yeleyko and I. Kyrychynska, preprint available at <http://arxiv.org/abs/1108.1513>)

OTHER PUBLICATIONS – ANDERE PUBLIKATIONEN

1. Vision-based DRL Autonomous Driving Agent with Sim2Real Transfer, *Proceedings of the IEEE Intelligent Transportation Systems Society Conference 2023* (with D. Li)
2. A Nonparametric Multivariate Statistical Process Control Chart Based on Change Point Model, in: Zh. Zhang, K.-H. Yuan, Y. Wen and J. Tang (eds.), *New Developments in Data Science and Data Analytics, Proc. of the 2019 Meeting of International Society for Data Science and Analytics*, 2019 (with Y.-F. Xu)
3. Awareness of climate change (focus on the Russian Arctic zone), *Proceedings of the International Research Workshop on Information Technologies and Mathematical Modeling for Efficient Development of Arctic Zone*, Yekaterinburg, Russia, April 19-21, 2018, pp 38–42, (with S. Lösch and H. Wiesmeth)
4. Fahrdynamikbasierte Entscheidungsmodelle zur mikroskopischen Simulation des Verkehrsflusses auf Binnenwasserstraßen, *Bundesanstalt für Wasserbau (BAW) (publisher): Wasserbauliche Herausforderungen an den Binnenschifffahrtsstraßen*. Karlsruhe: Bundesanstalt für Wasserbau (BAW), pp. 61–66, 2017, URL: <https://henry.baw.de/handle/20.500.11970/104383> (with N. Fischer and M. Treiber).
5. Diffusion of Environmental Awareness, *Diffusion Fundamentals* 30, 2017, pp. 1–16 (with S. Lösch and H. Wiesmeth)
6. Copulae in High Dimensions: An Introduction, in: C. Chen, W. K. Härdle and L. Overbeck (eds.), *Applied Quantitative Finance*, third ed. (2017), Springer Verlag, (with A. Ristig and Y. Xu), pp. 247–277, DOI: 10.1007/978-3-662-54486-0.13
7. Can expert knowledge compensate for data scarcity in crop insurance pricing?, Selected paper AAEA Annual Meeting 2013, Washington D.C. (with Z. Shen and M. Odening)
8. Modeling Time-Varying Dependencies between Positive-Valued High-Frequency Time Series, in: P. Jaworski, F. Durante and W.K.Härdle (eds.), *Copulae in Mathematical and Quantitative Finance*, (2013), Springer Verlag. (with A. Ristig and N. Hautsch)
9. HMM and HAC, *Advances in Intelligent Systems and Computing* Volume 190, 2013, pp 341-348, DOI 10.1007/978-3-642-33042-1.37 (with W. K. Härdle and W. Wang)
10. CDO Pricing with Copulae, *In Bulletin of the International Statistical Institute, 57th Session Durban Vol. 57. Bulletin of the International Statistical Institute*, 2009, (with B. Choroś and W. K. Härdle)
11. Fitting high-dimensional Copulae to Data, in: J.-C. Duan, J. E. Gentle, and W. K. Härdle (eds.), *Handbook of Computational Finance*, (2011) Springer Verlag, pp. 469-503.
12. Modeling Dependencies with Copulae, in: W. K. Härdle, N. Hautsch and L. Overbeck (eds.), *Applied Quantitative Finance*, second ed. (2008), Springer Verlag, pp. 3-36. (with W. K. Härdle and Y. Okhrin)

13. Portfolio selection based on the internal yield requirement, proceedings of *7th international workshop for young mathematicians: Applied Mathematics*, Cracow, 2005, pp. 131-149 (with I. Yatsyshynets and Y. Yeleyko)
14. Renewal theory and stock returns, *Applied statistics. Actuarial and Financial Mathematics. #1-2*, pp. 217-218, 2004 (with Y. Yeleyko, in ukrainian)

CONFERENCES – KONFERENZEN

- Jun. 2024 11th Tartu Conference on Multivariate Statistics, Tartu, EE
- Jun. 2024 Invited Speaker at *Risk Management and Quantification Conference*, Wien, AT
- May 2024 Keynote Speaker at *The 8th International Conference on Probability and Statistics*, Smolenice Castle, SK
- Mar. 2024 Workshop on “Stochastic Models, Statistics and Their Applications”, Delft, NL
- Sep. 2023 Statistische Woche, Dortmund, DE
- Aug. 2023 COMPSTAT, London, UK
- Mar. 2023 German Statistics and Probability Days, Duisburg, DE
- Mar. 2023 Workshop on “Digitalisierung in der Binnenschifffahrt”, Karlsruhe, DE
- Dec. 2022 Workshop on Maritime Autonomous Surface Ships (MASS), EMSA, Lisbon, PT
- Oct. 2022 Workshop on “Statistics of Stochastic Processes in Discrete and Continuous Time”, Kyiv, UA
- Sep 2022 Statistische Woche, Münster, DE
- May 2022 EcoSta 2022, Kyoto, JP
- May 2022 Conference “Intrinsic Time in Finance”, Konstanz, DE
- Mar. 2022 Invited Speaker at “Big and Smart Data Analytics in Finance”, Freiburg, DE
- Nov. 2021 Science on the Rocks in Clausthal-Zellerfeld, DE
- Jul. 2021 Summer School of IRTG 1792 in Buckow, DE
- Jun. 2021 Invited Speaker at “Modern Stochastics: Theory and Applications V” Kyiv, UA
- Sep. 2020 Invited speaker at the Urban Traffic Conference (due to COVID online), Frankfurt, DE
- Feb. 2020 Jahrestreffen des Ökonometrischen Ausschusses des VfS, Rauischholzhausen, DE
- Jun. 2019 EcoSta 2019, Taichung, TW
- Jun. 2019 Vine Copulas and their Applications, Munich, DE
- Mar. 2019 Statistics under one Umbrella, Munich, DE
- Dec. 2018 CFE-CMStatistics 2018, Pisa, IT
- Sep. 2018 International Seminar on the Frontiers of Data Science at SWUFE in Chengdu, CN
- Sep. 2018 Workshop on Dependence Modelling, Aegina, GR
- Sep. 2018 Statistische Woche, Linz, AT
- Mar. 2018 Verkehrswissenschaftliche Tage: Grenzloser Verkehr, Dresden, DE
- Oct. 2017 Sino German workshop on “DEDA - Digital Economy & Decision Analytics”, Xiamen, CN
- Sep. 2017 Invited Speaker at *Computational Intelligence and Data Mining - 5th workshop*, Martin, SK
- Jul. 2017 Workshop on “Integration of Transportation, Statistics and Big Data”, Dresden, DE
- Jul. 2017 “Copulas and Their Applications. 75th birthday of Prof. Roger B. Nelsen”, Almeria, ES
- Dec. 2016 CFE-CMStatistics 2016, Sevilla, ES
- Oct. 2016 Abschlusskolloquium CRC 649, Berlin, DE
- Oct. 2016 Workshop on “Statistics in Finance and Process Monitoring”, Frankfurt/Oder, DE
- Sep. 2016 Ferienakademie, Sarntal/Southtirol, IT
- Sep. 2016 Salzburg workshop on dependence models and copulas, Salzburg, AT
- Sep. 2016 40th Annual Meeting of the Italian Association for Mathematics Applied to Economic and Social Sciences (AMASES), Catania, IT
- Sep. 2016 Statistische Woche, Augsburg, DE

- Jul. 2016 Summer Research Workshop: *Quantitative Methods in Economics*, Cottbus, DE
- Jun. 2016 9th Annual SoFiE Conference, HK
- May 2016 Dependence modeling in Finance, Insurance and Environmental Science, Munich, DE
- Mar. 2016 DAGStat 2016, Göttingen, DE
- Dec. 2015 Invited talk at the CFE-ERCIM, London, UK
- Oct. 2015 Dresden-Berlin Workshop on "*High-Dimensionality of Transport and Digital Economy*", Dresden, DE
- Okt. 2015 Viadrina Days on Empirical Economics, Frankfurt/Oder, DE
- Sep. 2015 Statistische Woche 2015, Hamburg, DE
- Jul. 2015 WISE-CASE Workshop on Econometrics and Statistics, Xiamen, CN
- Jun. 2015 8th Annual SoFiE Conference, Aarhus, DK
- Apl. 2015 Workshop on "*Copulae: on the crossroads of mathematics and economics*", Oberwolfach, DE
- Dec. 2014 CFE-ERCIM, Pisa, IT
- Oct. 2014 Humboldt-Aarhus-Xiamen Workshop 2014, Berlin, DE
- Sep. 2014 Joint Meeting of the German Mathematical Society (DMV) and the Polish Mathematical Society (PTM), Poznan, PL
- Sep. 2014 Statistische Woche 2014, Hannover, DE
- Aug. 2014 21st International Conference on Computational Statistics, Genf, CH
- Jul. 2014 Workshop "*Non- and Semiparametric Volatility and Correlation models*", Paderborn, DE
- May 2014 Workshop "*Methods and Challenges in Financial Risk Measurement*", Kloster Druebeck, DE
- Nov. 2013 Princeton-Humboldt Conference, Princeton, US
- Nov. 2013 Invited talk at "*DyMaMo Konferenz 2013*", organized by Deutsches Telekom AG, Bonn, DE
- Sep. 2013 Statistische Woche 2013, Berlin, DE
- Sep. 2013 Workshop "*Copula modeling: New challenges and techniques*", München, DE
- Apr. 2013 MCTN Conference, Konstanz, DE
- Dec. 2012 Invited talk at the CFE-ERCIM 2012, Oviedo, ES
- Sep. 2012 6th International Conference on Soft Methods in Probability and Statistics, Konstanz, DE
- Sep. 2012 *International Conference dedicated to 120-th anniversary of STEFAN BANACH*, Lviv, UA
- Jul. 2012 *Copulae in Mathematical and Quantitative Finance*, Cracow, PL
- May 2012 Märkische Schweiz Summer School on *Statistics in Finance and Insurance*, Bukow, DE
- May 2012 *Methods and Challenges in Financial Risk Measurement 2012*, Kloster Druebeck, DE
- Apr. 2012 Workshop on "*Risk and Dependence in Economics and Finance*", Bolzano, IT
- Jan. 2012 Energy Finance Workshop, Stolberg (Harz), DE
- Oct. 2011 Workshop on "*Statistical Analysis of Financial Data*", Rijeka, HR
- Sep. 2011 Statistische Woche 2011, Leipzig, DE
- Aug. 2011 ISI 2011, Dublin, IE
- Jun. 2011 IME 2011, Trieste, IT
- Jun. 2011 ASMDA 2011, Rome, IT
- May 2011 Invited talk at "*4th Workshop on Vine Copula Distributions and Applications*", München, DE
- Jan. 2011 Risk Calibration Workshop, Institute of Statistical Science, Academia Sinica, Taipei, TW
- Dec. 2010 Invited talk at the CFE-ERCIM 2010, London, UK
- Sep. 2010 Statistische Woche 2010, Nuremberg, DE
- Jul. 2010 Symposium on "*High-Dimensional Data in Empirical Finance*", Dortmund, DE (discussant)
- Jun. 2010 Symposium on "*Computational Finance*", SG (session chair)
- Mar. 2010 DAGStat 2010, Dortmund, DE
- Mar. 2010 Workshop on "*High-Dimensional Data Analysis in Economics*", Zagreb, HR
- Oct. 2009 Perceiving and Measuring Financial Risk: Credit, Energy and Illiquidity, Princeton, US (session chair)
- Oct. 2009 Statistische Woche 2009, Wuppertal, DE
- Sep. 2009 Workshop on "*Copula Theory and its Applications*", Warsaw, PL

- Jul. 2009 The 64th European Meeting of the Econometric Society and the 24th Annual Congress of the European Economic Association, EEA-ESEM 2009, Barcelona, ES
- Jul. 2009 Invited talk at the *International Symposium on Risk Management and Derivatives 2009*, Xiamen, CN
- Dec. 2008 Invited talk at the *4th World Conference of the IASC 2008*, Yokohama, JP
- Oct. 2008 International Conference on Price, Liquidity, and Credit Risk, Konstanz, DE
- Sep. 2008 First Summer School on Copulas, Linz, AT
- Mar. 2008 *8th German Open Conference on Probability and Statistics*, Aachen, DE (session chair)
- Dec. 2007 Workshop on "*Copulae: Theory and Practice*", Berlin, DE
- May 2007 Radon Workshop on Financial and Actuarial Mathematics for Young Researchers, Linz, AT
- Mar. 2007 DAGStat 2007, Bielefeld, DE
- Sep. 2005 7th International Workshop for Young Mathematicians: Applied Mathematics, Cracow, PL
- May 2005 4th All-Ukrainian Scientific Conference for Graduate and Postgraduate "*Theoretical and Applied Aspects of the Analysis of the Financial Systems*", Lviv, UA
- Apr. 2004 Economics in the Postcommunist Countries under Globalization, Lviv, UA
- Apr. 2004 3rd All-Ukrainian Scientific Conference for Graduate and Postgraduate, Lviv, UA
- Apr. 2004 7th All-Ukrainian Students Scientific Conference in Programming and Applied Mathematics, Lviv, UA
- Mar. 2004 Problems and Perspectives of the Ukrainian's Finance-Credit System, Lviv, UA

RESEARCH VISITS – FORSCHUNGSaufenthalte

- 3-16.12.2022 Dep. of Applied Finance, Macquarie University, hosted by A. Singh, Sydney, Australia
- 12-17.10.2020 Research in Pairs in Mathematical Research Institute Oberwolfach (MFO) with M. Pesta, I. Mizera and M. Maciak, DE
- 24-30.11.2019 Statistics Group, TU Delft, hosted by N. Parolya, NL
- 13-16.11.2019 Faculty of Math. and Stat., University of St. Gallen, hosted by M. Fengler, CH
- 7-12.11.2019 Departement of Finance, University of Lausanne, hosted by M. Rockinger, CH
- 16-22.07.2019 SWUFE Global Academy, Chengdu, China
- 1-8.07.2018 SWUFE Global Academy, Chengdu, China
- 1-21.10.2018 Dep. of Applied Finance, Macquarie University, hosted by A. Singh, Sydney, Australia
- 21-24.06.2017 Institut für Statistik, Leibniz Universität Hannover, hosted by N. Parolya, Hannover, Germany
- 03-10.06.2017 Chair of Economics and Econometrics, University Konstanz, hosted by R. Halbleib, W. Pohlmeier, Konstanz, Germany
- 17-25.06.2016 Center of Statistical Research in Southwestern University of Finance and Economics, Hosted by S. Zhang, Chengdu, China
- 1-7.09.2014 Department of Statistics and Operations Research, Universität Wien, hosted by N. Hautsch, Vienna, Austria
- 10-17.03.2013 Department of Mathematics, Instituto Superior Técnico Lisbon, hosted by M. C. Morais, Lisbon, Portugal
- 3-10.03.2013 Economics Department, Universidad Carlos III de Madrid, hosted by A. Taamouti, Madrid, Spain
- 29.09-05.10.2012 Faculty of Economics at the University of Rijeka, hosted by S. Zikovic, Rijeka, Croatia
- 15-25.05.2012 Stevanovitch Center for Financial Mathematics at the University of Chicago, hosted by P. Mykland, Chicago, USA
- 7-22.04.2012 Chair of Statistics, Universität Augsburg, hosted by Yarema Okhrin, Augsburg, Germany
- 1-31.03.2012 Faculty of Biostatistics, University of Michigan, hosted by Peter X. Song, Ann Arbor, USA
- 21.02-22.03.2011 ORFE, Princeton University, hosted by J. Fan, Princeton, USA
- 10-21.01.2011 Academia Sinica, hosted by C.-D. Fuh, Taipei, Taiwan

SEMINARS – SEMINARE

- Mai. 2023 School of Finance, University of Luxembourg, organized by M. Podolskij
- Jun. 2019 Talk at “Centre de Recherche en Economie et Statistique” at CREST, organized by J.-M. Zakoian and C. Gouriéroux, Paris, France
- Nov. 2018 Talk at Econometric Institute, Erasmus University of Rotterdam, organized by M. Grith, Netherlands
- Nov. 2018 Research Kolloquium in Economics an der Freien Universität Berlin, organized by T. Schmid and U. Rendtel, Berlin, Germany
- Sep. 2018 Statistics machine Learning Datascience in Singapore, organized by Y. Chen, Singapore
- Jul. 2017 Talk at Research Factory at the Europa-University Viadrina, organized by Ph. Otto, Frankfurt (Oder), Germany
- Jun. 2017 Faculty Seminar at Chair of Economics and Econometrics, University Konstanz, organized by R. Halbleib, W. Pohlmeier, Konstanz, Germany
- Mar. 2017 Seminar at CREST, organized by J.-D. Fermanian, J.-M. Zakoian, Ch. Gouriéroux, Paris, France
- Mar. 2017 Seminarium, Matematisk statistik, University of Stockholm, organized by T. Bodnar, Stockholm, Sweden
- Nov. 2016 Seminar at the Research Center for Statistics (RCS) at the Geneva School of Economics and Management, University of Geneva, organized by D. la Vecchia, Geneva, Switzerland
- Nov. 2016 Talk at the Polish Academy of Sciences, organized by T. Rychlik and P. Jaworski, Warsaw, Poland
- Mai. 2016 Seminar at the Chair of Econometrics and Statistics, organized by M. Massmann, WHU – Otto Bensheim School of Management, Vallendar
- Apr. 2016 Crash course on “Copulae”, organized by W. K. Härdle, HU Berlin, Germany
- Jun. 2015 Seminar at the Chair of Econometrics, organized by D. Bauer, Uni Bielefeld, Germany
- Apr. 2015 Brown Bag Seminar, TU Dresden, Germany
- Nov. 2014 Presentation at the Collaborative Research Centre 823, organized by D. Wied, TU Dortmund, Germany
- Mar. 2012 Statistics Seminar in the IOMS/Statistics Group, NYU Stern School of Business, organized by R. Deo, New York, USA
- Feb. 2011 Brown Bag Seminar at the University of Michigan, organized by P. X. Song, Ann Arbor, USA
- Feb. 2011 Financial Mathematics Seminar at The Stevanovitch Center for Financial Mathematics at the University of Chicago, organized by P. Mykland, Chicago, USA
- Feb. 2011 Research in Econometrics Seminar at Harvard University, Organized by R. Ibragimov, G. Chamberlain, Cambridge, USA
- Jan. 2011 Seminar at the Sun Yat-Sen University, Organized by M.-H. Guo, Kaohsiung, Taiwan
- Jan. 2011 2011 NCTS & CMMSC Seminar at the Hsinchu University, Organized by H. HS Lu, Hsinchu, Taiwan
- Nov. 2010 Seminar at the University Bielefeld, Organized by G. Kauermann, Bielefeld, Germany
- Jun. 2010 Seminar at the National University of Kaohsiung, organized by R.-B. Chen, Kaohsiung, Taiwan
- Jun. 2010 Seminar at the Renmin University of China, organized by M. Tian, Beijing, China
- May 2010 “*Mathematical Koloquium*” at Carl von Ossietzky University of Oldenburg organized by T. Kneib, A. May, D. Pfeifer, Oldenburg, Germany
- Mar. 2010 “*Quantitative Methods Seminar*” at Universität St.Gallen organized by M. Fengler, St. Gallen, Switzerland
- Jul. 2009 Seminar at Hong Kong University of Science and Technology organized by Y.-K. Kwok, Hong Kong, China
- Feb. 2009 “*Statistisch/ökonomisches Seminar*” at Christian-Albrechts-Universität zu Kiel organized by H. Herwartz, R. Liesenfeld and V. Golosnoy, Kiel, Germany
- Dec. 2008 “*Quantitativ Ökonomisches Colloquium*” at Freie Universität Berlin organized by U. Rendtel, Berlin, Germany

- Jul. 2008 Seminar "*Finanz- und Versicherungsmathematik*" of the LMU and TU organized by C. Czado, C. Klüppelberg and R. Zagst, Munich, Germany
- May 2007 WIAS Research Seminar "*Mathematical Statistics*" organized by W. K. Härdle and V. Spokoiny, Berlin, Germany