Curriculum Vitae

Benedikt Jahnel

Univ.-Prof. Dr. rer. nat. habil.

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www.benejahnel.de/mathematics

Diplom mathematician (D) · Diplom music educator (D) · Master of arts (USA)
Born May 28th 1980 in St. Martin D'Heres (France)

Last updated: 5 November 2026

Research interests

- Gibbs measures and phase transitions
- Stochastic geometry and interacting particle systems
- Probabilistic methods for mobile ad-hoc networks

Scientific employment

04/2022 – present	W2-professorship for Stochastics for Applications at Technische Universität Braunschweig
11/2021	Offer for a W2-professorship for Stochastics at Philipps-Universität Marburg (declined)
01/2021 – present	Researcher at the Weierstrass Institute Berlin (WIAS), head of the Leibniz group Probabilistic Methods for Dynamic Communication Networks
04/2019	Offer for a PostDoc with tenure track to professorship at Universität Innsbruck (declined)
01/2015 – 12/2020	Researcher at WIAS, member of the research group Interacting Random Systems led by Prof. Dr. W. König
06/2014 – 12/2014	PostDoc at Ruhr-University Bochum

University education

06/2021	Habilitation at Technische Universität Berlin Stochastic geometry and communication networks & statistical mechanics for point processes and stochastic dynamics Promoters: Profes. Dres. W. König, S. Jansen, A. van Enter, and F. Baccelli
10/2011 – 05/2014	PhD student at Ruhr-University Bochum, Germany, member of the DFG project SFB/TR 12 'Symmetries and Universality in Mesoscopic Systems' Gibbs measures under local discretization and rotation dynamics Supervisors: Profes. Dres. Ch. Külske, A. van Enter, and P. Eichelsbacher Thesis passed with distinction: Summa cum laude
10/2010 – 10/2011	PhD student at Bergische University Wuppertal
10/2003 – 10/2010	Diploma student in mathematics at Technische Universität Berlin The central limit theorem for random walks in Markovian environments Supervisors: Profes. Dres. J. Blath and N. Kurt Thesis passed with distinction: Final grade 1.1
09/2005 – 06/2007	Master student in music at City College New York Master of arts: GPA 3.9
10/2000 – 04/2005	Diploma student in music education at University of Arts Berlin Diploma in music education: Final grade 1.6

Service

04/2025 – present	Elected Studiendekan at Technische Universität Braunschweig
03/2025 – present	Elected member of the board of the Fachgruppe Stochastik (promotion of young talent)
08/2024 – 03/2025	Elected Deputy Studiendekan at Technische Universität Braunschweig
05/2024 – present	Elected Deputy Ombudsperson at WIAS

09/2021 – 09/2025	EURANDOM Ambassador, Eindhoven University of Technology
05/2021 – 04/2024	Elected Ombudsperson at WIAS
09/2019 – present	Member of the postdoctoral faculty of the Berlin Mathematical School

Publications and preprints

79 publications and preprints in total, newest first within each area. Full list with links: www.benejahnel.de/mathematics

Stochastic geometry

1. Uniqueness and full coverage in k-neighbor graphs
   with D. Coupier, B. Henry, J. Köppl: Preprint arXiv:2611.06800 (2026)
2. Comparison inequalities for discrete- and continuous-time infection processes
   with J. Köppl, P. Silins: Preprint arXiv:2609.09892 (2026)
3. Convex order and faster transmission in first contact percolation
   with J. Köppl, L. Lüchtrath, A.D. Vu: Preprint arXiv:2605.28766 (2026)
4. Detection, coverage and percolation in dynamic Boolean models with random radii based on alpha-stable processes
   with P. Gracar, L. Lüchtrath, A.D. Vu: Preprint arXiv:2602.22109 (2026)
5. Local criteria for global connectivity comparisons: beyond stochastic domination
   with J. Bäumler, J. Köppl, B. Lodewijks, L. Reeves, A. Tóbiás: Preprint arXiv:2510.03934 (2025)
6. Throughput in inhomogeneous planar drainage networks
   with P. Ghosh, Y. Steenbeck: Preprint arXiv:2506.18132 (2025)
7. Phase transitions for contact processes on one-dimensional networks
   with L. Lüchtrath, D. Mönch: Preprint arXiv:2501.16858 (2025)
8. A long-range oriented percolation model in random columnar time-space environment
   with A.D. Vu: accepted at Journal of Theoretical Probability (2026)
9. Coexistence for competing branching random walks with identical asymptotic shape on Z^d
   with P. Ghosh: accepted at Bernoulli (2026), arXiv:2512.09153
10. Phase transitions for contact processes on sparse random graphs via metastability and local limits
    with L. Lüchtrath, D. Mönch: accepted at Bernoulli (2026)
11. Cluster sizes in subcritical soft Boolean models
    with L. Lüchtrath, M. Ortgiese: accepted at Annals of Applied Probability (2026)
12. The planar lattice two-neighbor graph percolates
    with D. Coupier, B. Henry, J. Köppl: accepted at Annals of Probability (2026)
13. Oriented bond-site percolation in random environment and contact processes with periodic recovery
    with L. Lüchtrath, A.D. Vu: ALEA, Latin American Journal of Probability and Mathematical Statistics, Vol. 23, 739–759 (2026)
14. Functional limit theorems for edge counts in dynamic random connection hypergraphs
    with C. Hirsch, P. Juhasz: Electronic Journal of Probability, Vol. 31, 1–82 (2026)
15. Subcritical annulus crossing in spatial random graphs
    with L. Lüchtrath, E. Jacob: Advances in Applied Probability (2026)
16. First contact percolation
    with L. Lüchtrath, A.D. Vu: Bernoulli, Vol. 32, No. 2, 1594–1619 (2026)
17. Large and moderate deviations in Poisson navigations
    with S. Jhawar, P. Ghosh: Advances in Applied Probability, Vol. 58, No. 1, 387–424 (2026)
18. Stochastic homogenization on irregularly perforated domains
    with M. Heida, A.D. Vu: Networks and Heterogeneous Media, Vol. 20, No. 1, 165–212 (2025)
19. Percolation in lattice k-neighbor graphs
    with J. Köppl, B. Lodewijks, A. Tóbiás: Journal of Applied Probability, Vol. 62, No. 4, 1475–1492 (2025)
20. Poisson approximation of fixed-degree nodes in weighted random connection models
    with C. Hirsch, S. Jhawar, P. Juhasz: Stochastic Processes and their Applications, Vol. 183 (2025)
21. An ergodic and isotropic zero-conductance model with arbitrarily strong local connectivity
    with M. Heida, A.D. Vu: Electronic Communications in Probability, Vol. 29, No. 66, 1–13 (2024)
22. Chase-escape in dynamic device-to-device networks
    with A. Hinsen, E. Cali, J.-P. Wary: Journal of Applied Probability, Vol. 61, No. 1, 311–339 (2024)
23. Connectivity in mobile device-to-device networks in urban environments
    with A. Hinsen, E. Cali, J.-P. Wary: IEEE Transactions on Information Theory, Vol. 69, No. 11, 7132–7148 (2023)

24. Continuum percolation in a nonstabilizing environment
with S. Jhawar, A.D. Vu: Electronic Journal of Probability, Vol. 28, No. 131, 1–38 (2023)

25. Connection intervals in multi-scale dynamic networks
with E. Cali, C. Hirsch: Stochastic Models, Vol. 39, No. 4, 851–877 (2023)

26. Limiting shape for first-passage percolation models on random geometric graphs
with C. Coletti, L. de Lima, A. Hinsen, D. Valesin: Journal of Applied Probability, Vol. 60, No. 4, 1367–1385 (2023)

27. Absence of percolation in graphs based on stationary point processes with degrees bounded by two
with A. Tóbiás: Random Structures and Algorithms, Vol. 62, No. 1, 240–255 (2023)

28. Sharp phase transition for Cox percolation
with C. Hirsch, S. Muirhead: Electronic Communications in Probability, Vol. 27, No. 48, 1–13 (2022)

29. Percolation and connection times in multi-scale dynamic networks
with E. Cali, C. Hirsch: Stochastic Processes and their Applications, Vol. 151, 490–518 (2022)

30. Phase transitions for the Boolean model of continuum percolation for Cox point processes
with A. Tóbiás, E. Cali: Brazilian Journal of Probability and Statistics, Vol. 36, No. 1, 20–44 (2022)

31. SINR percolation for Cox point processes with random powers
with A. Tóbiás: Advances in Applied Probability, Vol. 54, No. 1, 227–253 (2021)

32. Phase transitions for chase-escape models on Gilbert graphs
with A. Hinsen, E. Cali, J.-P. Wary: Electronic Communications in Probability, Vol. 25, No. 25, 1–14 (2020)

33. Exponential moments for planar tessellations
with A. Tóbiás: Journal of Statistical Physics, Vol. 179, 90–109 (2020)

34. Probabilistic methods for telecommunications
with W. König: Compact Textbooks Series in Mathematics at Birkhäuser (2020)

35. Lower large deviations for geometric functionals
with C. Hirsch, A. Tóbiás: Electronic Communications in Probability, Vol. 25, No. 41, 1–12 (2020)

36. Probabilistic methods for spatial multihop communication systems
with W. König: Topics in Applied Analysis and Optimisation, Springer, Vol. 10, 239–268 (2019)

37. Large deviations for the capacity in dynamic spatial relay networks
with C. Hirsch: Markov Processes and Related Fields, Vol. 25, 33–73 (2019)

38. Continuum percolation for Cox point processes
with E. Cali, C. Hirsch: Stochastic Processes and their Applications, Vol. 129, 3941–3966 (2019)

39. Space-time large deviations in capacity-constrained relay networks
with C. Hirsch, R. Patterson: Latin American Journal of Probability and Mathematical Statistics, Vol. 15, 587–615 (2018)

40. Large deviations in relay-augmented wireless networks
with C. Hirsch, P. Keeler, R. Patterson: Queueing Systems, Vol. 88, No. 3–4, 349–387 (2018)

41. Traffic flow densities in large transport networks
with C. Hirsch, P. Keeler, R. Patterson: Advances in Applied Probability, Vol. 49, No. 4, 1091–1115 (2017)

42. Large-deviation principles for connectable receivers in wireless networks
with C. Hirsch, P. Keeler, R. Patterson: Advances in Applied Probability, Vol. 48, 1061–1094 (2016)

Statistical mechanics

43. Space-time large deviations for continuum birth-and-death processes
with J. Köppl, Y. Steenbeck, A. Zass: Preprint arXiv:2610.28307 (2026)

44. Lattice random-field Widom-Rowlinson models
with D. Kamecke, C. Külske: Preprint arXiv:2605.18744 (2026)

45. Restriction and mixing properties of interacting particle systems with unbounded range
with J. Köppl: Preprint arXiv:2603.21817 (2026)

46. Reversible birth-and-death dynamics in continuum: a de Bruijn-type identity for free-energy dissipation
with J. Köppl, Y. Steenbeck, A. Zass: Preprint arXiv:2602.13474 (2026)

47. Reversible birth-and-death dynamics in continuum: free-energy dissipation and attractor properties
with J. Köppl, Y. Steenbeck, A. Zass: Preprint arXiv:2508.21196 (2025)

48. Phase transitions for the Widom–Rowlinson model in random environments
with D. Kamecke: Preprint arXiv:2505.05319 (2025)

49. Locality properties for discrete and continuum Widom-Rowlinson models in random environments
with C. Külske, A. Zass: accepted at Annals of Applied Probability (2026)

50. The variational principle for a marked Gibbs point process with infinite-range multibody interactions
with J. Köppl, Y. Steenbeck, A. Zass: Electronic Journal of Probability, Vol. 30, 1–32 (2025)

51. Time-periodic behaviour in one- and two-dimensional interacting particle systems
with J. Köppl: Annales Henri Poincaré (2025)

52. On the long-time behaviour of reversible interacting particle systems in one and two dimensions
with J. Köppl: Probability and Mathematical Physics, Vol. 6, No. 2, 479–503 (2025)

53. Three-state p-SOS models on binary Cayley trees
with U. Rozikov: Journal of Statistical Mechanics: Theory and Experiment (2024)

54. Gibbs measures for hardcore-SOS models on Cayley trees
with U. Rozikov: Journal of Statistical Mechanics: Theory and Experiment (2024), arXiv:2404.03297

55. Trajectorial dissipation of Phi-entropies for interacting particle systems
with J. Köppl: Journal of Statistical Physics, Vol. 190, No. 119 (2023)

56. Dynamical Gibbs variational principles for irreversible interacting particle systems with applications to attractor properties
with J. Köppl: Annals of Applied Probability, Vol. 33, 4570–4607 (2023)

57. A micro-macro variational formula for the free energy of a many-body system with unbounded marks
with O. Collin, W. König: Electronic Journal of Probability, Vol. 28, No. 118, 1–58 (2023)

58. Gibbsianness and non-Gibbsianness for Bernoulli lattice fields under removal of isolated sites
with C. Külske: Bernoulli, Vol. 29, No. 4, 3013–3032 (2023)

59. Gibbsianness of locally thinned random fields
with N. Engler, C. Külske: Markov Processes and Related Fields, Vol. 28, 185–214 (2022)

60. Gibbsian representation for point processes via hyperedge potentials
with C. Külske: Journal of Theoretical Probability, Vol. 34, 391–417 (2021)

61. Phase transitions for a model with uncountable spin space on the Cayley tree: The general case
with G. Botirov: Positivity, Vol. 23, 291–301 (2019)

62. Extremal decomposition for random Gibbs measures
with C. Cotar, C. Külske: Electronic Communications in Probability, Vol. 23, No. 95 (2018)

63. Attractor properties for irreversible and reversible interacting particle systems
with C. Külske: Communications in Mathematical Physics, Vol. 366, No. 1, 139–172 (2018)

64. The Widom-Rowlinson model under spin flip: Immediate loss and sharp recovery of quasilocality
with C. Külske: Annals of Applied Probability, Vol. 27, No. 6, 3845–3892 (2017)

65. Sharp thresholds for Gibbs-non-Gibbs transition in the fuzzy Potts models with a Kac-type interaction
with C. Külske: Bernoulli Journal, Vol. 23, No. 4A, 2808–2827 (2017)

66. Attractor properties of non-reversible dynamics w.r.t. invariant Gibbs measures on the lattice
with C. Külske: Markov Processes and Related Fields, Vol. 22, 507–535 (2016)

67. A class of non-ergodic weak PCAs with unique invariant measure and quasi-periodic orbit
with C. Külske: Stochastic Processes and their Applications, Vol. 125, 2427–2450 (2015)*

68. Phase transition and critical values of a n.n. system with uncountable local state space on Cayley trees
with G. Botirov, C. Külske: Mathematical Physics, Analysis and Geometry, Vol. 17, 1385-0172 (2014)

69. Gibbsian and non-Gibbsian properties of the generalized mean-field fuzzy Potts-model
with C. Külske, E. Rudelli, J. Wegener: Markov Processes and Related Fields, Vol. 20, 601–632 (2014)*

70. Synchronization for discrete mean-field rotators
with C. Külske: Electronic Journal of Probability, Vol. 19, No. 14 (2014)*

71. A class of nonergodic interacting particle systems with unique invariant measure
with C. Külske: Annals of Applied Probability, Vol. 24, 2595–2643 (2014)*

* Part of PhD thesis

Wireless network architecture

72. Multi-agent simulations for virus propagation in D2D 5G+ networks
with Z. Benomar, C. Ghribi, E. Cali, A. Hinsen, J.-P. Wary: WIAS Preprint No. 2953

73. Absence of percolation in graphs based on stationary point processes with degrees bounded by two
with A. Tóbiás: Proceedings of the 12th Japanese-Hungarian Symposium on Discr. Math. & Appl. (2023)

74. Agent-based simulations for coverage extensions in 5G networks and beyond
with C. Ghribi, E. Cali, C. Hirsch: Proceedings of ICIN (2022)

75. Agent-based modeling and simulation for malware spreading in D2D networks
with Z. Benomar, C. Ghribi, E. Cali, A. Hinsen: Proceedings of AAMAS (2022)

76. Malware propagation in urban D2D networks
with A. Hinsen, E. Cali, J.-P. Wary: Proceedings of WiOpt/SpaSWiN (2020)

77. The typical cell in anisotropic tessellations
with C. Hirsch, A. Hinsen, E. Cali: Proceedings of WiOpt/SpaSWiN (2019)

78. Percolation for D2D networks on street systems
with E. Cali, N. Gafur, C. Hirsch, T. En-Najjary, R. Patterson: Proceedings of WiOpt/SpaSWiN (2018)

79. Disruptive events in high-density cellular networks
with P. Keeler, O. Maye, D. Aschenbach, M. Brzozowski: Proceedings of WiOpt/SpaSWiN (2018)

Working notes and collaborative repositories

Working note	Critical mean out-degrees of directed, undirected and bidirectional lattice neighbour graphs, Zenodo (2026), doi:10.5281/zenodo.23859215
Repository	Lattice k-nearest-neighbour percolation, public collaborative repository, github.com/jonaskoeppl/percolation-discrete-knn
Repository	Poisson-line Cox percolation, public collaborative repository, github.com/benejahnel/isotropic-poisson-line-cox-percolation

Outreach and report articles

2024	Challenges and opportunities of D2D networks, MATH+ Cluster of Excellence Success Story
2024	with M. Heida, A.D. Vu: Stochastic geometry in homogenization, WIAS Annual Research Report
2021	with A. Hinsen: Probabilistic methods for communication systems, WIAS Annual Research Report
2020	with W. König, A. Quitmann: Phase transitions of condensation type in interacting particle systems, WIAS Annual Research Report
2017	with W. König: Probabilistic methods for mobile ad hoc networks, WIAS Annual Research Report

Conference, seminar and other talks

07/2026	Seminar at TU Dortmund, Dortmund Germany
05/2026	Mathematical Analysis and Dynamical Systems, Tashkent Uzbekistan
02/2026	Ludwig-Maximilian Universität, Munich Germany
01/2026	Seminar at Lille University, Lille France
07/2025	Seminar at TU Dresden, Dresden Germany
06/2025	Seminar INRIA, Paris France
06/2025	Stat-Mech at Créteil 2025, Paris France
06/2025	Recent Advances in Evolving and Spatial Random Graphs, Bayrischzell Germany
05/2025	Stochastic Geometry and Point Processes, Münster Germany
05/2025	Mathematical Analysis and Dynamical Systems, Tashkent Uzbekistan
04/2025	Rhein-Main Stochastik Seminar, Darmstadt Germany
04/2025	Seminar at Groningen University, Groningen The Netherlands
02/2025	Seminar at Weierstrass-Institute Berlin, Berlin Germany
01/2025	Seminar at Universität Augsburg, Augsburg Germany
10/2024	Stochastic Geometry Workshop, Lille France
09/2024	Long-range Phenomena in Percolation, Köln Germany
08/2024	Bernoulli-IMS 11th World Congress in Probability and Statistics, Bochum Germany
04/2024	Gibbs Measures and the Theory of Dynamical Systems, Tashkent Uzbekistan
11/2023	Seminar at TU Braunschweig, Braunschweig Germany
10/2023	Seminar at Reutlingen University, Reutlingen Germany
09/2023	Random Graphs and Statistical Network Analysis, Ilmenau Germany
09/2023	Seminar at TU Braunschweig, Braunschweig Germany
07/2023	29th Nordic Congress of Mathematicians, Aalborg Denmark
06/2023	21st INFORMS Applied Probability Society Conference, Nancy France
06/2023	Universität Magdeburg, Magdeburg Germany
06/2023	Universität Köln, Köln Germany
03/2023	Random Geometric Systems, Köln Germany
02/2023	BOS-Workshop on Stochastic Geometry, Osnabrück Germany
01/2023	Topics in High Dimensional Probability, Bangalor India
11/2022	IEEE CloudNet 2022, Paris France
08/2022	Random Geometries and Stochastic Interacting Processes, Bonn Germany
04/2022	MMS Days, PIC Potsdam Germany
03/2022	Spring School, Darmstadt Germany
03/2022	Seminar at University of Padova, Padova Italy
11/2021	Stochastic Geometry Days, Dunkerque France

10/2021	Seminar at University of Bath, Bath UK
09/2021	Randomness unleashed, Groningen The Netherlands
07/2021	Seminar at Orange, Paris France
06/2021	Seminar at Charité at the Humboldt University, Berlin Germany
05/2021	Seminar at TU Berlin, Berlin Germany
01/2021	Dyogene Seminar INRIA, Paris France
10/2020	Universität Augsburg, Augsburg Germany
08/2020	Bernoulli-IMS One World Symposium 2020, Online
11/2019	Technische Universität, Hamburg Germany
11/2019	Quaid-i-Azam University Seminar, Islamabad Pakistan
10/2019	Probability, Analysis and Applications Workshop, AIMS Ghana
07/2019	SPA Conference, Evanston USA
06/2019	Phase Transitions and Particle Systems, Berlin Germany
05/2019	Universität Hildesheim, Hildesheim Germany
04/2019	Stochastic Modeling of Complex Systems, Mannheim Germany
03/2019	Universität Innsbruck, Innsbruck Austria
10/2018	Martin-Luther-Universität, Halle-Wittenberg Germany
10/2018	University Potsdam Seminar, Potsdam Germany
09/2018	Ibn Zohr University Seminar, Agadir Morocco
09/2018	TU Darmstadt Seminar, Darmstadt Germany
07/2018	Topics in Mathematical Physics, Sao Paolo Brazil
07/2018	Geometry and Scaling of Random Structures, Buenos Aires Argentina
06/2018	Universität Mannheim, Mannheim Germany
05/2018	International School in Model & Simulation Based Research, Berlin Germany
05/2018	Universität Leipzig, Leipzig Germany
04/2018	Universidad Carlos III de Madrid Seminar, Madrid Spain
03/2018	Random Structures in Neuroscience and Biology, Herrsching Germany
03/2018	Evolutionary Processes on Networks, Kigali Ruanda
02/2018	German Stochastic Days, Freiburg Germany
02/2018	University Osnabrück Seminar, Osnabrück Germany
01/2018	Transformations and Phase Transitions, Bochum Germany
11/2017	Ruhr Universität Bochum, Bochum Germany
04/2017	Technion Workshop on Stochastic Analysis and Random Fields, Haifa Israel
09/2017	Sharif University Seminar, Tehran Iran
04/2017	University Mainz Seminar, Mainz Germany
03/2017	University Luxembourg Seminar, Luxembourg
02/2017	LMU München Seminar, München Germany
01/2017	WWU Münster Seminar, Münster Germany
10/2016	Transformations in Statistical Mechanic, Leiden Netherlands
07/2016	Regensburg University Seminar, Regensburg Germany
03/2016	German Stochastic Days, Bochum Germany
03/2016	Universität Mannheim, Mannheim Germany
02/2016	Bucharest University Seminar, Bucharest Romania
11/2015	Research Institute for Mathematical Sciences Seminar, Kyoto Japan
09/2015	Recent Trends in Stochastic Analysis, Hamburg Germany
05/2015	Marc Kac Seminar, Utrecht Netherlands
09/2014	Applied and Geometrical Analysis, Samarkand Uzbekistan
03/2014	German Stochastic Days, Ulm Germany
02/2014	Symmetries & Universality in Mesoscopic Systems, Langeoog Germany
02/2014	Spatial Models in Statistical Mechanics, Darmstadt Germany
Since 2014	30 talks on popular science

Editorial and referee work

Guest editor for the Journal of Theoretical Probability (German Stochastic and Statistics Days Edition). Referee work for Journal of Statistical Physics; Electronic Journal of Probability; Electronic Communications in Probability; Applied Probability Journals; Bernoulli; Stochastic Processes and Applications; Annals of Applied Probability; Reports on Mathematical Physics; Entropy; European Journal of Pure and Applied Mathematics; Phase Transitions; Markov Processes and Related Fields; Stochastics; Journal of Applied and Computational Topology; TWMS Journal of Applied and Engineering Mathematics; Indian Journal of Pure and Applied Mathematics; National Research, Development and

Innovation Office of Hungary; DAAD; DFG; Czech Science Foundation; IEEE Internet of Things Journal; IEEE Transactions on Communications; IEEE Access; Dutch Research Council Science

Organized workshops, conferences and sessions

07/2026	Spreading Dynamics in Random Environment, Weierstrass Institute Berlin
10/2025	Recent Developments in Interacting Random Systems, Weierstrass Institute Berlin
03/2025	GPSD Invited Session, TU Dresden
02/2025	Stochastic Processes on Random Geometries, TU Braunschweig
08/2024	Bernoulli-ims 11th World Congress Contributed Session, Bochum, Germany
09/2024	Interacting Particles in the Continuum, TU Eindhoven
01/2024	Dynamics of Random Geometric Structures, Weierstrass Institute Berlin
10/2022	Recent Trends in Spatial Stochastic Processes, TU Eindhoven, The Netherlands
06/2022	Random Point Processes in Statistical Physics, Weierstrass Institute Berlin
11/2020	Stochastic Geometry and Communications, Weierstrass Institute Berlin
10/2019	Probability, Analysis and Applications Workshop, AIMS Accra, Ghana
07/2019	SPA Contributed Session, Northwestern University Evanston, USA
11/2018	WIAS - PDI Open Access Day, Weierstrass Institute Berlin
02/2017	WIAS Days, Weierstrass Institute Berlin
11/2016	Probabilistic Methods in Telecommunications, Weierstrass Institute Berlin

Funding

Research grants

01/2026 – 12/2028	Math+ research grant (190k € with L. Lüchtrath): Information Flow & Emergent Behavior in Complex Networks
01/2024 – 12/2025	Math+ research grant (160k €): Data Transmission in Dynamical Random Networks
03/2024 – 02/2027	DFG research grant within SPP2265 (200k €): Gibbs Point Processes in Random Environment
10/2022 – 10/2023	Seed funding TU Braunschweig (1.2k € with Y. Wu): Random Periodic Orbits and Periodic Measures
10/2022 – 10/2023	ECAS fellowship (1k € with Y. Wu): Random Periodic Orbits and Periodic Measures in Interacting Particle Systems
01/2021 – 12/2026	Leibniz junior research group (1,000k €): Probabilistic Methods for Dynamic Communication Networks
01/2021 – 12/2023	DFG research grant within SPP2265 (350k € with W. König & A. Drewitz): Statistical Mechanics of Interlacement Processes
01/2019 – 09/2022	Math+ research grant (172k € with W. König): Influence of Mobility on Connectivity
09/2018 – 08/2022	DAAD research grant (200k € with W. König & D. Becherer): Gibbs Measures on Random Processes
06/2017 – 12/2018	ECMath research grant (86k € with W. König): Data Mobility in Ad-hoc Networks: Vulnerability and Security
10/2010 – 10/2011	DFG research grant proposal (granted after leave): SDEs Describing Critical Fluctuations in a Van der Waals–Maxwell gas

Industry collaborations

09/2020 – 08/2021	Cooperation with major French telecommunication company (35k €): Malware Propagation in Mobile Device-to-Device Networks
12/2019 – 11/2020	Cooperation with major French telecommunication company (35k €): Connectivity Improvements in Mobile D2D Networks
12/2018 – 11/2019	Cooperation with major French telecommunication company (35k €): Coverage and Mobility in D2D Networks
07/2018 – 06/2019	Cooperation with major French telecommunication company (35k €): Data Mobility in Networks: Vulnerability and Security
11/2017 – 09/2018	Cooperation with major French telecommunication company (29k €): The Typical Cell in Anisotropic Tessellations

11/2016 – 10/2017	Cooperation with major French telecommunication company (35k €): Continuum Percolation Theory Applied to D2D

Workshop support

10/2025 – 10/2025	SPP (10k € with H. Döring & C. Muckerjee): Recent Developments in Spatial IRSs
02/2025 – 02/2025	SPP (15k € with S. Andres): Stochastic Processes on Random Geometries
10/2022 – 10/2022	EURANDOM (10k € with F. Redig & W. Ruzel): Interacting Particles in the Continuum
10/2022 – 10/2022	NETWORKS (4k € with F. Redig & W. Ruzel): Interacting Particles in the Continuum
10/2022 – 10/2022	STAR (4k € with F. Redig & W. Ruzel): Interacting Particles in the Continuum
01/2024 – 01/2024	Math+ (2k €): Dynamic Spatial Random Systems
01/2024 – 01/2024	SPP (3k €): Dynamic Spatial Random Systems
10/2022 – 10/2022	EURANDOM (17k € with P. Horn & J. Kumjathy): Recent Trends in Spat. Stoch. Proc.
10/2022 – 10/2022	NETWORKS (8k € with P. Horn & J. Kumjathy): Recent Trends in Spatial Stoch. Proc.
10/2022 – 10/2022	STAR (4k € with P. Horn & J. Kumjathy): Recent Trends in Spatial Stoch. Proc.

Scholarships and awards

09/2005 – 05/2007	DAAD postgraduate scholarship
01/2000 – 08/2011	Several music awards

Teaching

2025	Student nomination for ‘TU Braunschweig Teaching Award 2025’
2014	Certificate ‘Professional Teaching at Universities’ (200h): Moderation, motivation, time-management, presentation techniques, etc.

Lectures

10/2026 – 02/2027	Risk and Extreme Value Theory (TU Braunschweig)
since 04/2023	RampUp Course Stochastics for Data Scientists (every semester, TU Braunschweig)
04/2026 – 07/2026	Probability Theory and Discrete Financial Mathematics (4 SWS, TU Braunschweig)
10/2025 – 02/2026	Introduction to Probability Theory (4 SWS, TU Braunschweig)
04/2025 – 07/2025	Geometry (2 SWS, TU Braunschweig)
10/2024 – 02/2025	Point Processes (4 SWS, TU Braunschweig) with Partha Ghosh
10/2024 – 02/2025	Introduction to Probability Theory for Teachers (4 SWS, TU Braunschweig)
10/2023 – 02/2024	Markov Processes (4 SWS, TU Braunschweig) with Partha Ghosh
10/2023 – 02/2024	Introduction to Probability Theory (4 SWS, TU Braunschweig)
04/2023 – 07/2023	Geometry (2 SWS, TU Braunschweig)
04/2023 – 07/2023	Probability Theory and Discrete Financial Mathematics (4 SWS, TU Braunschweig)
10/2022 – 02/2023	Introduction to Probability Theory (4 SWS, TU Braunschweig)
04/2022 – 07/2022	Probability Theory and Discrete Financial Mathematics (4 SWS, TU Braunschweig)
04/2020 – 07/2020	Spin Systems and Phase Transitions (2 SWS, TU Berlin) with Dr. Taggi
04/2018 – 07/2018	Spatial Stochastic Models for Telecommunications (2 SWS, TU Berlin) with Prof. König, new lecture notes and book
10/2017 – 02/2018	Mathematics for Engineers (4 SWS, TU Berlin) codesign of new combined module for analysis and linear algebra

Seminars

10/2026 – 02/2027	Seminar in Stochastics (TU Braunschweig)
04/2025 – 07/2025	Master Seminar in Stochastics (2 SWS, TU Braunschweig)
10/2024 – 02/2025	Bachelor Seminar in Stochastics (2 SWS, TU Braunschweig)
04/2023 – 07/2023	Bachelor Seminar in Stochastics (2 SWS, TU Braunschweig)
10/2022 – 02/2023	Master Seminar in Stochastics (2 SWS, TU Braunschweig)
04/2022 – 07/2022	Bachelor Seminar in Stochastics (2 SWS, TU Braunschweig)
04/2020 – 07/2020	Spin Systems and Phase Transitions (2 SWS, TU Berlin) with Dr. Taggi
04/2018 – 07/2018	Spatial Stochastic Models for Telecommunications (2 SWS, TU Berlin) with Prof. König

04/2011 – 07/2011	Interacting Particle Systems (2 SWS, Bergische University Wuppertal)

Minicourses

07/2023 – 07/2023	Percolation Theory (5 lectures, Probability and Geometry on Configuration Spaces, Berlin)
08/2022 – 08/2022	Introduction to Percolation Theory (2 lectures, Hausdorff Center for Mathematics, Bonn)
09/2019 – 10/2019	Introduction to Probability Theory (10 lectures, AIMS Ghana)
09/2018 – 09/2018	Spatial Stochastic Models with Applications in Telecommunications (4 lectures, University Osnabrück summer school)
08/2017 – 08/2017	Stochastic Geometry in Telecommunications (3 lectures, TU Berlin summer school)

Lecture notes and learning websites

Lecture notes	Risiko- und Extremwerttheorie (German, 2026)
Lecture notes	Wahrscheinlichkeitstheorie und diskrete Finanzmathematik (German, 2026)
Lecture notes	Einführung in die Stochastik (German, 2026)
Lecture notes	Ramp-Up Mathematics: Stochastics (English, 2026)
Lecture notes	Probabilistic Methods in Telecommunications (English, with W. König)
Learning website	Einführung in die Stochastik, interactive learning website (German, 2026)
Learning website	Wahrscheinlichkeitstheorie und diskrete Finanzmathematik, interactive learning website (German, 2026)
Learning website	Ramp-Up Mathematics: Stochastics, interactive learning website (English, 2026)

All available at www.benejahnel.de/mathematics

Additional teaching in music

09/2006 – 05/2007	Jazz Ensembles (assistant, City College New York)
10/2003 – 02/2004	Eartraining & Music Theory (assistant, University of Arts Berlin)
01/2006 – present	Jazz Masterclasses (internationally)

Supervision

2022	Leibniz Academy Certificate ‘Leadership Development Program’ (90h): self-leadership, leading others, collegial case consultation

PostDoc

11/2022 – present	Long-range Percolation (TU Braunschweig, primary supervisor)
03/2021 – 03/2026	Non-Markovian Contact Processes (WIAS, primary supervisor)
03/2024 – 07/2024	Data Transmission in Random Networks (WIAS, primary supervisor)
09/2021 – 08/2023	Large Deviations in Wireless Networks (WIAS, primary supervisor)

PhD

ongoing	Infection Dynamics on Random Graphs (WIAS, primary supervisor)
ongoing	Gibbs Point Processes in Random Environment (TU Braunschweig, primary supervisor)
ongoing	Continuum Gibbs Variational Principles (TU Braunschweig, primary supervisor)
07/2026	On the Long-time Behaviour of Interacting Particle Systems (WIAS, primary supervisor)
01/2026	Condensation and connectivity in spatial random graphs (Cologne, ext. examiner)
04/2025	Synchronization In Random Networks (Groningen, ext. examiner)
01/2025	Data Mobility in Ad Hoc Networks: Vulnerability and Security (WIAS, primary supervisor)
09/2024	Percolation in Random Environments & Stoch. Homog. (WIAS, primary supervisor)
04/2024	Limit Theory for Spatial Random Networks (Groningen, ext. examiner)
01/2022	The Modification of Boolean Models in Random Network Analysis (Osnabrück, ext. examiner)

Diplom

10/2021	Große Abweichungen des Durchsatzes bei zufälligen Mediumzugangsprotokollen (TU Berlin, secondary supervisor, with Prof. König)

Master

2026	Design and Development of a Predictive Enterprise Architecture Data Product using Graph Theory, Machine Learning and Mathematical Modelling (TU Braunschweig, primary supervisor)
2026	Detection of Structural Changes in Time Series (TU Braunschweig, primary supervisor)
07/2025	Der Einfluss von Geometrie in planarer 2-Nachbar Perkolation (TU Braunschweig, primary supervisor)
06/2024	Scharfe Phasenübergänge in gerichteter Perkolation (TU Braunschweig, primary supervisor)
06/2022	Degree distributions in dense communication networks (AIMS Ghana, primary supervisor)
04/2022	Dynamical Gibbs variational principles for irreversible interacting particle systems (TU Berlin, primary supervisor)
05/2021	Gibbsianness of locally-thinned random fields (TU Berlin, primary supervisor)
09/2013	Phase Transitions in the Generalized Potts and Fuzzy Potts Models in Mean Field (Ruhr-University Bochum, informal co-supervision, with Prof. Külske)
09/2013	Gibbs Properties of the Generalized Potts and Fuzzy Potts Model in Mean Field (Ruhr-University Bochum, informal co-supervision, with Prof. Külske)

Bachelor

2026	Kettenlängen in Poisson-Booleschen Modellen (TU Braunschweig, primary supervisor)
07/2023	k-Nachbar Perkolation (TU Braunschweig, primary supervisor)
05/2011	Renewal Theory (Ruhr-University Bochum, informal co-supervision, with Prof. Külske)

Outreach and public engagement

2026	Interview for Spektrum.de on the supposed AI-generated proof of the percolation-function conjecture
2026	Expert for the children’s podcast “Kakadu” (Deutschlandfunk Kultur): Seit wann gibt es Mathematik?
2026	Lecture programme at the Tag der Informatik und Mathematik, TU Braunschweig
2025	Public talks at “Mathematische Forschung verstehen” (FU Berlin) and the Hochschulinformationstag (TU Braunschweig)
2016–2025	Talks at the Tag der Mathematik (2016, 2017, 2023, 2025)
2022	Studium Generale and Schnupperstudium talks at TU Braunschweig (“Die Poesie der Logik”)
2022	Expert interviewee for Spektrum der Wissenschaft: Perkolationstheorie – Folgenschwer verknüpft
2015, 2022	Talks at the Lange Nacht der Wissenschaften Berlin
2021	Expert interviewee for Scientific American: The Mathematics of How Connections Become Global
2020	Talk at MathInside Berlin