

# Cornelia Vogel

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## Contact Information

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## Personal Information

Born March 8, 1995 in Augsburg, Germany

Citizenship German

## Academic Positions

since 01/2025 **Postdoctoral Researcher**, Università degli Studi di Milano  
Supervisor: Prof. Dr. Niels Benedikter

## Education

since 10/2019 **PhD (Mathematics)**, University of Tübingen  
Thesis: *Typical Macroscopic Behavior of Large Quantum Systems*  
Supervisors: Prof. Dr. Stefan Teufel, Prof. Dr. Roderich Tumulka

10/2018 – **Master of Science (Mathematics)**, University of Stuttgart  
10/2019 Thesis: *Dynamics of the Polaron*  
Supervisor: Prof. Dr. Marcel Griesemer

10/2015 – **Master of Science (Physics)**, University of Tübingen  
09/2018 Thesis: *A Mathematical Analysis of the Quantum Equilibrium Hypothesis*  
Supervisor: Prof. Dr. Stefan Teufel

10/2015 – **Bachelor of Science (Mathematics)**, FernUniversität in Hagen  
07/2018 Thesis: *Laws of Large Numbers and Central Limit Theorems for Curie-Weiss Spin Subsystems*  
Supervisor: Prof. Dr. Werner Kirsch

10/2012 – **Bachelor of Science (Physics)**, University of Stuttgart  
09/2015 Thesis: *Study of the Hartle-Thorne Metric for Rotating Neutron Stars with Methods from Relativistic Visualisation*  
Supervisor: Prof. Dr. Günter Wunner

10/2012 – **Bachelor of Science (Psychology)**, FernUniversität in Hagen  
09/2015 Thesis: *Dual-Tasks and Optimisation Mechanisms in Dual-Task Performance through Training - An Empirical Study about Dual-Task Performance in Old Age*  
Supervisor: Prof. Dr. Tilo Strobach

06/2012 **Abitur**, Friedrich-Schiller-Gymnasium Fellbach

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## Publications and Preprints

- [5] C. Vogel. Long-Time Behavior of Typical Pure States from Thermal Equilibrium Ensembles, 2024, Preprint (*submitted*). arXiv:2412.16666
- [4] B. Roos, S. Teufel, R. Tumulka and C. Vogel. Macroscopic Thermalization for Highly Degenerate Hamiltonians After Slight Perturbation, 2024, Preprint (*submitted*). arXiv:2408.15832
- [3] S. Teufel, R. Tumulka and C. Vogel. Canonical Typicality for Other Ensembles than Micro-canonical. *Annales Henri Poincaré*, 2024. arXiv:2307.15624
- [2] S. Teufel, R. Tumulka and C. Vogel. Typical Macroscopic Long-Time Behavior for Random Hamiltonians. *Annales Henri Poincaré*, 2024. arXiv:2303.13242
- [1] S. Teufel, R. Tumulka and C. Vogel. Time Evolution of Typical Pure States from a Macroscopic Hilbert Subspace. *Journal of Statistical Physics*, 190(69), 2023. arXiv:2210.10018

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## Scholarships

- 09/2021 – 12/2024 Doctoral Scholarship from the German Academic Scholarship Foundation (*Studienstiftung des deutschen Volkes*)
- 10/2012 – 09/2013 Deutschlandstipendium, University of Stuttgart

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## Talks and Posters

- 01/2025 *Macroscopic Thermalization for Highly Degenerate Hamiltonians* (Seminar Talk), Oberseminar Mathematical Physics, University of Tübingen, Tübingen, Germany
- 12/2024 *Macroscopic Thermalization for Highly Degenerate Hamiltonians* (Seminar Talk), Oberseminar: Calculus of Variations and Applications, LMU Munich, Munich, Germany
- 08/2024 *Thermalization of Free Fermion Systems* (Contributed Poster), Rigorous Renormalization Group Analysis of Collective Phenomena in Fermionic Quantum Systems, Como, Italy
- 05/2024 *Concentration of measure for thermal distributions of quantum states* (Seminar Talk), Itinerant Quantum Math Meetings, Università degli studi di Milano, Milan, Italy
- 03/2024 *Concentration of measure for thermal distributions of quantum states* (Seminar Talk), MathPhys Analysis Seminar, IST Austria, Klosterneuburg, Austria
- 08/2023 *Canonical Typicality For Other Ensembles Than Micro-Canonical* (Contributed Talk), 793. WE-Heraeus-Seminar: Nonequilibrium Physics – Current Trends and Future Perspectives, Bad Honnef, Germany
- 08/2023 *Canonical Typicality For Other Ensembles Than Micro-Canonical* (Contributed Talk), Current Topics in Mathematical Physics, Warsaw, Poland
- 06/2023 *Canonical Typicality For Other Ensembles Than Micro-Canonical* (Seminar Talk), Oberseminar Mathematical Physics, University of Tübingen, Tübingen, Germany
- 08/2022 *Typical Macroscopic Long-Time Behavior for Random Hamiltonians* (Contributed Talk), Laws of Nature Conference, Munich, Germany

- 08/2022 *Generalized Normal Typicality* (Contributed Talk), Summer School: The Nature of Entropy II: Arrow of Time, Kochel am See, Germany
- 06/2022 *Typical Macroscopic Long-Time Behavior for Random Hamiltonians* (Contributed Poster), Probability and Mathematical Physics, Helsinki, Finland
- 06/2021 *Boltzmann Entropy in Quantum Systems* (Seminar Talk), Functional Analysis Seminar, University of Tübingen, Tübingen, Germany (online)
- 11/2019 *Dynamics of the Polaron* (Seminar Talk), Oberseminar Mathematical Physics, University of Tübingen, Tübingen, Germany

## Research Visits

- 12/2024 LMU Munich, Munich, Germany (9.12.–12.12.2024)  
Invited by Prof. Dr. Arnaud Triay and Prof. Dr. Phan Thành Nam
- 05/2024 Università degli studi di Milano, Milan, Italy (5.5.–11.05.2024)  
Invited by Prof. Dr. Niels Benedikter
- 03-06/2024 IST Austria, Klosterneuburg, Austria (1.3.–23.6.2024)  
Group of Prof. Dr. László Erdős

## Conferences and Schools

- 08/2024 *Rigorous Renormalization Group Analysis of Collective Phenomena in Fermionic Quantum Systems*, Como, Italy
- 07/2024 *Summer School on Current Topics in Mathematical Physics*, Zurich, Switzerland
- 07/2024 *XXI International Congress on Mathematical Physics (ICMP)*, Strasbourg, France
- 06/2024 *Young Researcher Symposium (YRS)*, Strasbourg, France
- 06/2024 *3rd ISTA Summer School in Analysis and Mathematical Physics*, Klosterneuburg, Austria
- 08/2023 *793. WE-Heraeus-Seminar: Nonequilibrium Physics – Current Trends and Future Perspectives*, Bad Honnef, Germany
- 08/2023 *Current Topics in Mathematical Physics*, Warsaw, Poland
- 06/2023 *Recent Advances in Quantum and Statistical Mechanics*, Bonn, Germany
- 03/2023 *Scaling limits and generalized hydrodynamics*, L'Aquila, Italy (online)
- 08/2022 *Laws of Nature Conference*, Munich, Germany
- 08/2022 *Summer School: The Nature of Entropy II: Arrow of Time*, Kochel am See, Germany
- 07/2022 *Probability and Mathematical Physics*, Helsinki, Finland
- 06/2022 *Mathematical results of many-body quantum systems*, Herrsching, Germany
- 09/2021 *Statistical and Quantum Mechanics: reconsidering their foundations in the light of new cutting edge experiments and theoretical models*, L'Aquila, Italy (online)
- 08/2021 *XX International Congress on Mathematical Physics (ICMP)*, Geneva, Switzerland
- 07/2021 *Young Researcher Symposium (YRS)*, Geneva, Switzerland
- 07/2021 *Summer School: Current Topics in Mathematical Physics*, Zurich, Switzerland
- 04–06/2021 *SRF Course: Soliton stability in nonlinear dispersive PDEs set on the line* (online)
- 03/2021 *Gran Sasso Quantum Meetings: From Equilibrium Phenomena Towards Open Quantum Systems* (online)

07/2019 *Summer School: The Nature of Entropy I : From thermodynamics to black holes*, Saig, Germany

## Teaching Experience

- Winter 2023/24 Teaching Assistant for *Analysis 2* (two exercise classes during the first half of the semester), University of Tübingen
- Winter 2020/21 Teaching Assistant for *Mathematical Quantum Theory* (two exercise classes), University of Tübingen
- Summer 2020 Teaching Assistant for *Mathematical Statistical Physics* (one exercise class), University of Tübingen
- Winter 2019/20 Teaching Assistant for *Analysis 2* (one exercise class), University of Tübingen
- Summer 2017 Teaching Assistant for *Stochastics* (one exercise class), University of Tübingen
- Summer 2015 Teaching Assistant for *Linear Algebra and Analytical Geometry II* (one exercise class), University of Stuttgart
- Winter 2014/15 Teaching Assistant for *Linear Algebra and Analytical Geometry I* (one exercise class), University of Stuttgart
- Summer 2014 Teaching Assistant for *Linear Algebra and Analytical Geometry II* (one exercise class), University of Stuttgart
- Winter 2013/14 Teaching Assistant for *Linear Algebra and Analytical Geometry I* (one exercise class), University of Stuttgart

## Academic Services

Referee for *Annales Henri Poincaré* and *Physica A: Statistical Mechanics and its Applications*

- 2023 Member of the selection committee at a selection seminar for first/second-semester students for scholarships of the German Academic Scholarship Foundation (*Studienstiftung des deutschen Volkes*)
- 2021 Member of the hiring committee for *W1 Junior Professorship in Mathematical Quantum Theory*, University of Tübingen
- 2013/2014 Member of the hiring committee for *W1 Junior Professorship Ultrafast Optics and Solid-State Spectroscopy*, University of Stuttgart

## Mentoring Experience

- since 10/2023 Mentor for *Cybermentor*, Germany's largest online mentoring program for girls (from grade 5 to 13) in STEM

## Languages

- German Native speaker
- English Fluent
- Latin Advanced ("Großes Latinum", 2012)
- Italian Intermediate

Last updated: February 18, 2025