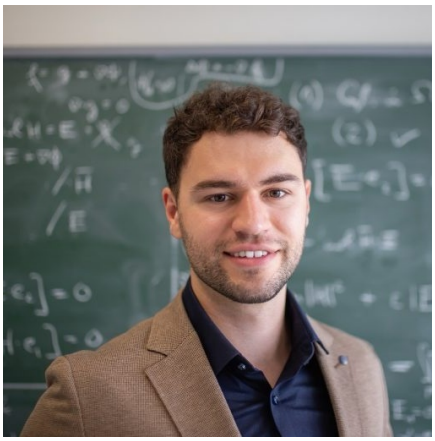
David Wiedemann



Date of Birth: July 29, 1996
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Education and work experience

2026– **PostDoc** fellowship of the Fondation Sciences Mathemématiques de Paris, Sorbonne Paris North University, France.
- Research on own project "Polarization dependent interface conditions for Maxwell's equation"

2023–2026 (currently) **PostDoc** at Technical University of Dortmund, Germany, Research and teaching assistant in the group of Prof. Dr. Ben Schweizer.
- Research on Maxwell's equations
- Teaching lectures and tutorial classes in analysis, organizing seminars and lectures

2019–2023 **PhD in Mathematics** at University of Augsburg, Germany, Research and teaching assistant in the group of Prof. Dr. Malte A. Peter.
- Research for my PhD project on analytical homogenisation:
  Thesis: "Analytical homogenisation of transport processes in evolving porous media" Grade: summa cum laude
- Research for DFG SPP 2256: Variational Methods for Predicting Complex Phenomena in Engineering Structures and Materials
- Organizing lectures, teching tutorial classes in analysis and numerical analysis

2017–2019 **M.Sc. in Mathematics (TopMath)** at Technical University of Munich, Germany.
- Thesis: "Homogenization of Stokes Flow with Evolving Microstructure"
  Grade: with high distinction, with honours
- Student in the elite study program TopMath

2014–2017 **B.Sc. in Mathematics** at University of Augsburg, Germany.
- Thesis: "Homogenisierung eines Reaktions-Diffusions-Problems mit veränderlicher Mikrostruktur"
- Student in the elite study program TopMath

Student research assistant (2017) in the group of Prof. Dr. Tobias Harks.
- Developed algorithmic mechanisms for optimal allocation of resources

Student tutor (2014-2016) at University of Augsburg.
- Teaching tutorial classes in analytic geometry, algebra and numerical analysis

02–05/2017 **Intern** at SGL Carbon (carbon company).
- Numerical implementation of models for elastoplastic deformations

Voluntary work

2016–2019 **Tutor** in the *Mathezirkel* for school children interested in mathematics.

- Coaching in advanced topics outside official state school curriculum

2016 **Tutor** at Kiron Open Higher Education,
kiron
- Teaching math tutorial classes for first-year engineering and computer science students.

Research stays

05–06/2023 Research stay at Aberystwyth University, *Aberystwyth*, UK.
- Research on water–wave interactions with multiple horizontal thin elastic or poroelastic plates.

01–04/2023 Research stay at the Isaac Newton Institute, *Cambridge*, UK.
- Participation in the program: "Mathematical theory and applications of multiple wave scattering".

09/2022 Research stay at Simon Fraser University, *Vancouver*, Canada.
SFU
- Research on multiscale fluid–solid interaction.

Funding acquisition

Postdoc fellowship of Fondation Sciences Mathemématiques de Paris. Two years research postdoc position for own project: "Polarization dependent interface conditions for Maxwell's equation", 2026–2028.

Part-time research position funded by the Marianne-Plehn-Programm, 2020–2023, 35.000 EUR.

PhD Scholarship from Studienstiftung des deutschen Volkes for project: "Coupled advection-reaction-diffusion problems with evolving microstructure: analysis and homogenisation", 2020–2023, 52.200 EUR.

Awards

GAMM Junior (2025–2027) at the Association of Applied Mathematics and Mechanics

SIAM Travel Award, 06/2023, 800 USD

Best Presentation Award, at the conference on "Mathematics and Mechanics of Solids and Structures", *Aberystwyth*, UK

Award for passing the Master of Science with high distinction, with honours 2019 from the Hurwitz Society for the Support of Mathematics at the TUM

TopMath Study Award 2017 from Technical University of Munich for excellent results in Bachelor degree studies, 400 EUR

Selected for the elite study program *TopMath* at University of Augsburg and Technical University of Munich

Academic service and further activities

08/2026 Co-organization of the Summer School: Multiscale Modeling and Homogenization on microstructures at University of Duisburg–Essen

04/2022 Co-organization of the winter school "Multiple Scales in Mathematics and Engineering" at University of Augsburg

Reviewer for Multiscale Modeling and Simulation, Proceedings of the Royal Society A, Nonlinearity, Networks and Heterogeneous Media, Communications in Contemporary Mathematics, Journal of Mathematical Analysis and Application, Continuum Mechanics and Thermodynamics, Studies in Applied Mathematics, Quarterly of Applied Mathematics, GAMM-Mitteilungen

2022–2023 SIAM Member

2018– GAMM Member

2022–2023 Board member of the GAMM Student Chapter of the University of Augsburg

2023 Member of the appointment committee for a W1 junior professorship

Outreach Activities

2026 "Mit Fibonacci und Reihen in die Wüste", outreach lecture, Schnuppertage Mathematik, Faculty of Mathematics, TU Dortmund University, Germany.

Invited talks

09/2026 New Paths in the PDEs of Fluid Mechanics: *Peyresq*, France.

02/2026 Zurich colloquium in applied and computational mathematics: "Interface conditions for Maxwell's equations by homogenization of thin inclusions: transmission, reflection or polarization", *ETH Zurich*, Swiss.

10/2025 3 City Seminar: "Interface conditions for Maxwell's equations by homogenization of thin inclusions: transmission, reflection or polarization", *Eindhoven University of Technology*, Netherlands.

12/2024 Research seminar for applied analysis. "Mathematical description of polarization", *Martin Luther University Halle–Wittenberg*, Germany.

04/2024 Talk at GAMM Junior Research Group: "On the notion of polyconvexity for isotropic functions", *TU Dortmund University*, Germany.

12/2023 Karlstad Applied Analysis Seminar (KAAS): "Homogenisation of a system of Stokes flow and advection-reaction-diffusion transport in a porous medium with coupled evolving microstructure", *Karlstad University*, Sweden.

07/2023 Research seminar for applied analysis. "Homogenisation of an advection–reaction–diffusion problem with coupled evolving microstructure", *TU Dortmund University*, Germany.

04/2023 Applied and Computational Mathematics Seminar Edinburgh. "Homogenisation of processes in porous media with evolving microstructure", *University of Edinburgh & Heriot-Watt University*, Germany.

09/2022 SFU Applied & Computational Math Seminar Series: "Homogenization in evolving porous media", *Simon Fraser University* Vancouver, Canada.

Further talks at conferences and workshops

11/2025 25th GAMM Seminar on Microstructures, *Dortmund*, Germany

09/2025 1st GAMM Activity Group Workshop "on Analysis of Partial Differential Equations and Calculus of Variations", *Dresden*, Germany

03/2025 GAMM Annual Meeting 22, *Posen*, Poland.

02/2025 Conference on Mathematics of Wave Phenomena 2025, *Karlsruhe*, Poland.

01/2025 24th GAMM Seminar on Microstructures 2025, *Berlin*, Germany.

11/2024 Fluid flow and reactive transport in porous media, *Ingolstadt*, Germany.

01/2025 12th Workshop of the GAMM Activity Group "Analysis of Partial Differential Equations", *Prag*, Czech Republic.

04/2024 Conference in memory of prof. Andro Mikelić, *Dubrovnik*, Croatia.

01/2024 23th GAMM Seminar on Microstructures 2024, *Bochum*, Germany.

09/2023 Annual Meeting SPP2256, *Regensburg*, Germany.

08/2023 ICIAM 2023 - 10th International Congress on Industrial and Applied Mathematics, *Tokyo*, Japan.

06/2023 SIAM Conference on Mathematical & Computational Issues in the Geosciences (GS23), *Bergen*, Norway.

02/2023 Workshop "Variational methods for complex phenomena in solids", *Bonn*, Germany.

10/2022 Arbeitsgemeinschaft: Quantitative Stochastic Homogenization, *Oberwolfach*, Germany.

09/2022 Annual Meeting SPP2256, *Regensburg*, Germany.

08/2022 GAMM Annual Meeting 22, *Aachen*, Germany.

06/2022 ECCOMAS 2022, *Oslo*, Norway.

04/2022 Microstructures in Elasticity and Phase-Transforming Solids, *Heidelberg*, Germany.

03/2022 SIAM Conference on Analysis of Partial Differential Equations, *online*.

01/2022 21st GAMM Seminar on Microstructures, *online*.

03/2021 GAMM Annual Meeting 21, *online*.

02/2021 InterPore German Chapter Meeting 2021, *online*.

10/2019 Fourth German–Russian Workshop on Numerical Methods and Mathematical Modelling in Geophysical and Biomedical Sciences, *Far Eastern Federal University, Vladivostok*, Russia.

09/2019 Meeting of SIAM and GAMM student chapters 2019, *RWTH Aachen*, Germany.

02/2019 GAMM Annual Meeting 19, *Vienna*, Austria.

10/2018 Third German–Russian–American Workshop on Numerical Methods and Mathematical Modelling in Geophysical and Biomedical Sciences, *Herrsching am Ammersee*, Germany.

09/2018 Meeting of SIAM and GAMM student chapters 2018, *TU Berlin*, Germany.

05/2018 Modelling and Numerics, *Sion*, Switzerland.