

Dr. Dennis Ulbrich



Email

EDUCATION

Dr. rer. nat. – Mathematics

University of Bremen, Department of Mathematics

4.2017 – 9.2021

- PhD thesis: Ergodic theory of nonlinear waves in discrete and continuous excitable media
 - Advisors: **Prof. J. Rademacher**, **Prof. M. Keßeböhmer**
 - Referees: Prof. J. Rademacher (University of Bremen), **Prof. I. Melbourne** (Warwick University)
- cf. **MGP**

Brückenstipendium of the University of Bremen

University of Bremen, Department of Mathematics

4.2016 – 4.2017

- Further studies
- Extensions of the results of my Master's thesis
- Successful acquisition of third-party funding (DFG) for my PhD project

M.Sc. and B.Sc. in Mathematics

University of Bremen

until 4.2016

- M.Sc. thesis: Dynamics of the three-state 1D Greenberg-Hastings cellular automaton
 - Referees: Prof. J. Rademacher, **Dr. T. Samuel** (University of Exeter)
- B.Sc. thesis: Unerwartete Fehler bei bedingten Erwartungswerten und Wahrscheinlichkeiten
 - Referees: **Prof. W. Brannath** (University of Bremen), **Dr. K. Falk** (University of Kiel)

EMPLOYMENT

Postdoctoral researcher

Hochschule Bremen, School of Electrical Engineering and Computer Science 2.2025 – 5.2025

- Project work: AI-based transmission, analysis and verification of handwritten documents

Lecturer in Mathematics

Hochschule Bremen, School of Nature and Engineering

10.2024 – 3.2025

- Mathematik 1

Postdoctoral Researcher

University of Münster, Department of Mathematics, Institute for Analysis and Numerics

6.2023 — 6.2024

- Research on discrete hypocoercivity within **DFG project 456849348**
- Keywords:
 - Hypocoercivity
 - Kinetic equations
 - BGK-type approximations
 - Chemical reactions
 - Entropy methods
- Supervision: **Prof. M. Pirner**

Non-academic professional activities

Bremen, Köln

9.2022 — 2.2023

Lecturer in Mathematics

Jacobs University Bremen, Mathematical Sciences

1.2022 — 6.2022

- Finite Mathematics
- Introduction to Dynamical Systems

Research assistant (PhD student)

University of Bremen, Department of Mathematics

4.2017 — 9.2021

Research groups: Nonlinear Analysis and Applied Analysis, Stochastics and Dynamical Systems

- Research within **DFG project number 384027439**
- PhD thesis: Ergodic theory of nonlinear waves in discrete and continuous excitable media:
 - Advisors: **Prof. J. Rademacher**, **Prof. M. Keßeböhmer**
 - Referees: Prof. J. Rademacher (University of Bremen), **Prof. I. Melbourne** (Warwick University)
- Keywords:
 - Nonlinear analysis
 - Ergodic Theory
 - PDE
 - Excitable media
 - Cellular automata
 - Dynamical Systems

OTHER

GRANTS

Brückenstipendium

University of Bremen, Department of Mathematics

4.2016 — 4.2017

- **More details**

SUPERVISION

Student Research Project

University of Bremen, Department of Mathematics

2021 — 2022

- Wave patterns in cellular automata for excitable media, see **here**

ORGANISATION

Administrational tasks

University of Bremen, Department of Mathematics

2016 – 2021

- Supporting several **summer and winter schools**
- Maintaining the Mathematical Collection of the University of Bremen and creating its website