

# **Dr. Dennis Ulbrich**



## 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](#)

### Brückensтипендиум der Universität 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

<b>Lecturer in Mathematics</b>	
Jacobs University Bremen, Mathematical Sciences	1.2022 – 6.2022
<ul style="list-style-type: none"> <li>• Finite Mathematics</li> <li>• Introduction to Dynamical Systems</li> </ul>	

<b>Research assistant (PhD student)</b>	
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

<b>Brückenstipendium</b>	
University of Bremen, Department of Mathematics	4.2016 – 4.2017

- [More details](#)

### SUPERVISION

<b>Student Research Project</b>	
University of Bremen, Department of Mathematics	2021 – 2022

- Wave patterns in cellular automata for excitable media, see [here](#)

### ORGANISATION

<b>Administrational tasks</b>	
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