

# 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. Keßeböhrer
  - Referees: Prof. J. Rademacher (University of Bremen), Prof. I. Melbourne (Warwick University)
- cf. MGP

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### **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

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### **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
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**Lecturer in Mathematics**

Hochschule Bremen, School of Nature and Engineering

10.2024 — 3.2025

- Mathematik 1
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**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
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**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
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**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