# 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