

I am a third-year PhD student at Ulm University under the supervision of Prof. Rico Zacher. My research concerns the regularity theory of linear and nonlinear kinetic partial differential equations. I am interested in a precise L^p -solution theory for linear kinetic PDE and in understanding a priori estimates for weak solutions of kinetic PDE. The goal is to apply these results to nonlinear kinetic partial differential equations such as the Boltzmann and Landau equations. Preprints of all publications are available on [arXiv](#).

EDUCATION

PhD student 2019 — 2022
Ulm University

- Working title: Analytic aspects of kinetic partial differential equations
- Advisor: Prof. Dr. Rico Zacher
- Funded by a graduate scholarship (grant number 1902 LGFG-E)

M.Sc. Mathematics 2018 — 2019
Ulm University

- Thesis: Kolmogorov equations - Well-Posedness, regularity, asymptotics and Harnack inequalities
- Grade: 1.0 with distinction, awarded for best graduation
- During my master's studies, I focused on Analysis, including courses on the calculus of variations, evolution equations, functional calculus, partial differential equations and optimal transport. This was supported by courses in applied mathematics such as numerical finance as well as a series of lectures on econophysics.

B.Sc. Mathematics 2014 — 2018
Ulm University

- Thesis: Long-time behavior of Markov chains by discrete functional inequalities and entropic Ricci curvature
- Grade: 1.1 with distinction, awarded for best graduation

Abitur, *Joachim-Hahn-Gymnasium Blaubeuren* 2014
Junior studies in mathematics, *Fernuniversität Hagen and Pfh Göttingen* 2013 — 2014

PUBLICATIONS

Kinetic maximal L^p -regularity with temporal weights and application to quasilinear kinetic diffusion equations 2022
Journal of Differential Equations, [link to the article](#).

Kinetic maximal $L^p_\mu(L^p)$ -regularity for the fractional Kolmogorov equation with variable density 2022
Nonlinear Analysis, [link to the article](#).

Kinetic maximal L^2 -regularity for the (fractional) Kolmogorov equation 2021
Journal of Evolution Equations, [link to the article](#).

WORKING AND TEACHING EXPERIENCE

Scientific assistant 2020 — 2022
University for applied sciences Neu-Ulm *Neu-Ulm, Germany*

- Design and supervision of a supplementary course on statistics and applications for first-year students with emphasis on programming in R

Working student 2015 — 2019
Daimler AG Research & Development *Ulm, Germany*

- Statistical Analysis with Matlab and Excel
- Supervising the operation of a quasi-static tension-compression testing machine

Scientific assistant 2017 — 2019
Ulm University *Ulm, Germany*

- Head of TA for Analysis 1, Analysis 2, Dynamical Systems, Elements of Functional analysis
Creation and presentation of exercises supplementary to the lectures, responsible for the student assistants
- Organization of the Trainingscamp. A yearly event for first-year students to refresh their mathematical skills.

Student assistant 2015 — 2017
Ulm University *Ulm, Germany*

- Tutor for the Matlab Analysis 1 and Analysis 2

AWARDS AND SCHOLARSHIPS

Master Graduation Award "Absolventenpreis M.Sc. Mathematik Uni Ulm 2020" for the best graduation	2022
Graduate scholarship granted by the State of Baden-Wuerttemberg, Germany (grant number 1902 LGFG-E)	2019 — 2022
Bachelor Graduation Award "Absolventenpreis B.Sc. Mathematik Uni Ulm 2018" for the best graduation	2018
Ferry Porsche Award and Graduation Award of the "Deutsche Physikalische Gesellschaft"	2014

VOLUNTEER WORK

Elected member in the council of PhD students at Ulm University <i>Representing the interests of doctoral students in university committees, e.g. for the change of the PhD regulations. Since 12/2021, chair of the PhD council.</i>	2020 — 2022
Elected member of the faculty council for Mathematics and Economic Sciences of Ulm University	2020 — 2022
Academic Student Council Mathematics <i>e.g. member of the appointment comitee for a professorship in "Stochastics"</i>	2017 — 2019

OTHER SCIENTIFIC ACTIVITIES

Co-organization of the seminar "Mathematisches Kolloquium" at Ulm University <i>Series of talks (five per term) at which researchers are invited to give a talk accessible to a broad audience</i>	2020 — 2022
Organization of a mini-workshop for PhD students in mathematics at Ulm University <i>One Weekend, 15 Participants, Funding (approx. 2000 €) acquired by the Proko Ulm University</i>	2022
Organization of a project for the workshop of the 25th Internetseminar <i>Title: Kolmogorov equation in $L^p(\mathbb{R}^{2n})$ – Semigroup, spectrum, maximal regularity?</i>	2022
Visiting researcher with Prof. Cyril Imbert, École normale supérieure Paris, one week	2021
Facilitator at the autumn school "COLLAB – Collaboratory for Global Sustainability 2021"	2021

TALKS AND POSTERS

Poster — 11th Summer school on "Methods and Models of Kinetic Theory", Pesaro	2022
Poster — Frontiers in analysis of kinetic equations, Isaac Newton Insitute Cambridge	2022
Talk — Nonlinear Evolution Equations and Approximations, Essen	2021
Talk — Oberseminar Analysis, Ulm	2021
Poster — Winterschool on Analysis and Applied Mathematics, Münster	2021

ATTENDED CONFERENCES

25th Internetseminar "Spectral Theory for Operators and Semigroups", Agropoli	2022
11th Summer school on "Methods and Models of Kinetic Theory", Pesaro	2022
Oxbridge PDE Conference, Oxford (virtual)	2022
Frontiers in the Interplay Between Probability and Kinetic Theory, Edinburgh	2022
Kinetic Theory: old and new tutorial, INI Cambridge (virtual)	2022
Frontiers in analysis of kinetic equations, INI Cambridge (virtual)	2022
Deep Learning and partial differential equations, INI Cambridge (virtual)	2021
Recent advances in Gradient Flows, Kinetic Theory, and Reaction-Diffusion Equations, Wien (virtual)	2021
Kinetic Equations: from Modeling Computation to Analysis, CIRM Marseille (virtual)	2021
Winterschool on Analysis and Applied Mathematics, Münster (virtual)	2021
PDE/Probability Interactions: Particle Systems, Hyperbolic Conservation Laws, CIRM Marseille	2019
Parabolic Evolution Equations, Harmonic Analysis And Spectral Theory, Bad Herrenalb	2019
Non Standard Diffusions in Fluids, Kinetic Equations and Probability, CIRM Marseille	2018
Evolution Equations in Ulm, Ulm	2018

SKILLS

Communication	German (native speaker), English (C1), French (B1)
IT Skills	C++, Excel (VBA), Java, \LaTeX , Mathematica, Matlab, R, Swift Advanced understanding of software and hardware