













Marius Müller

-  June 14, 1993 in Engelskirchen, Germany
-  Arbeitsgruppe Analysis Ernst-Zermelo-Straße 1, 79104 Freiburg
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Social Networks

 Researchgate Link




Languages

-  German 
-  English 
-  Italian 
-  Japanese 

Computing

-  MatLab 
-  Mathematica 
-  Sage 
-  Java 

Volunteering

-  As a student: treasurer of the student representation ('Fachschaft').
-  As a PhD student: speaker of Ulm PhD community (organization of networking events and invitations to mathematical colloquium) ([CLICK FOR INFORMATION](#)).
-  AMS MathSciNet Reviewer.
Referee activities for "Comm. Anal. Geom.", "Math. Eng.", "Interfaces Free Bound.", "Appl. Math."

Education and Academic Background

- 2011 **High School "Allgemeine Hochschulreife"** Gymnasium Lindlar
GPA: 1,7.
- Oct 2011 – Feb 2015 **B. Sc. "Wirtschaftsmathematik"** Ulm University
(\cong "Mathematics and Economy"). GPA: 1,3.
Bachelor Thesis:
Two Approaches to the Hardy Uncertainty Principle.
Supervisor: Anna Dall'Acqua.
- Feb 2015 – Jul 2016 **M.Sc "Mathematik"** Ulm University
Minor Subject: Physics. GPA: 1,0.
Master Thesis:
Anisotropic Curvature.
Supervisor: Anna Dall'Acqua.
- Aug 2016 – May 2017 **M.Sc. "Mathematics"** Syracuse University, USA
Double Degree Exchange Program. GPA: A.
- Jun 2017 – Oct 2020 **PhD Studies** Ulm University
Supervisor: Anna Dall'Acqua, Reviewers: Matteo Novaga (Pisa) and Matthias Röger (Dortmund). Grade: summa cum laude.
PhD Thesis:
Elastic bending – Variational problems and their geometry.
- Oct 2020 – now (currently paused) **Postdoc Position (Akad. Rat auf Zeit)** Freiburg University
Institut für Reine Mathematik, Group "Analysis" (Ernst Kuwert and Guofang Wang).
- Oct 2022 – now **Substitute Professor (Vertretungsdozent)** Leipzig University
Abteilung Analysis.

Working Experience

- Aug 2014 – Oct 2014 **Internship at "Fraunhofer ITWM"** Kaiserslautern
Topic: Statistical methods for multistep experimental designs.
Supervisor: Sascha Feth.
- 2012 – now **Teaching (see separate section)** Ulm/Syracuse/Freiburg

Awards

- 2017 **Graduation Award** Ulm University
"Absolventenpreis Mathematik M.Sc. 2017 Uni Ulm."
- 2021 **Teaching Award** Freiburg University
"Lehrpreis der Fachschaft Mathematik WiSe20/21."
([CLICK FOR INFORMATION](#))
- 2022 **PhD Thesis Award** Ulm University
"Promotionspreis der Ulmer Universitäts-gesellschaft", 1500 €. ([CLICK FOR INFORMATION](#))

Selected Grants

- 2016 **Fulbright Travel Grant** Fulbright Association
Travel expenses for exchange year in Syracuse, NY, USA.
- 2017–2020 **LGFG Grant** Ulm University
PhD income grant, LGFG \cong "Landegraduiertenförderungsgesetz", grant no. 1705 LGFG-E.

List of Publications

Published articles

- 2019 **1. An obstacle problem for elastic curves: existence results**
M. Müller
Interfaces Free Bound. **21**. DOI: 10.4171/IFB/418 ([CLICK](#))
- 2019 **2. On gradient flows with obstacles and Euler's elastica**
M. Müller
Nonlinear Anal. **192**. DOI: 10.1016/J.NA.2019.111676 ([CLICK](#))
- 2020 **3. On the convergence of the elastic flow in the hyperbolic plane**
M. Müller and A. Spener
Geom. Flows **5**. DOI: 10.1515/GEOFL-2020-0002 ([CLICK](#))
- 2020 **4. The elastic flow with obstacles: small obstacle results**
M. Müller
Appl. Math. Optim. **184**. DOI: 10.1007/s00245-021-09773-9 ([CLICK](#))
- 2021 **5. A Li-Yau inequality for the 1-dimensional Willmore energy**
M. Müller and F. Rupp
Adv. Calc. Var. (ahead of print) DOI: 10.1515/ACV-2021-0014 ([CLICK](#))
- 2022 **6. The Poisson equation involving surface measures**
M. Müller
Comm. PDE. **47**. DOI: 10.1080/03605302.2021.2013882 ([CLICK](#))
- 2022 **7. The biharmonic Alt-Caffarelli Problem in 2D**
M. Müller
Ann. Mat. Pura Appl. **201**. DOI: 10.1007/s10231-021-01178-3 ([CLICK](#))

Preprints

- 2020 **8. The Willmore flow of tori of revolution**
A. Dall'Acqua, M. Müller, R. Schätzle and A. Spener
[CLICK HERE TO VIEW PREPRINT](#)
- 2021 **9. Optimal thresholds for preserving embeddedness of elastic flows**
T. Miura, M. Müller and F. Rupp
[CLICK HERE TO VIEW PREPRINT](#)
- 2022 **10. An obstacle problem for the p -elastic energy**
A. Dall'Acqua, M. Müller, S. Okabe, K. Yoshizawa
[CLICK HERE TO VIEW PREPRINT](#)
- 2022 **11. Curvature varifolds with orthogonal free boundary**
E. Kuwert and M. Müller
[CLICK HERE TO VIEW PREPRINT](#)
- 2022 **12. On elliptic equations involving surface measures**
M. Müller
[CLICK HERE TO VIEW PREPRINT](#)
- 2022 **13. On elliptic equations involving surface measures**
M. Müller
[CLICK HERE TO VIEW PREPRINT](#)
- 2022 **14. Polyharmonic equations involving surface measures**
M. Müller
[CLICK HERE TO VIEW PREPRINT](#)

List of Talks/Posters/Workshops

Talks

12/2018	EDDY Weekly Seminar <i>On gradient flows with obstacles and Euler's elastica</i>	RWTH Aachen
07/2019	TULKKA-Treffen <i>The biharmonic Alt-Caffarelli problem</i> (LINK)	KIT Karlsruhe
11/2019	Winter School 'Gradient flows...' <i>On gradient flows with obstacles</i> (LINK)	Ulm University
12/2020	Online Seminar Geometric Analysis <i>The Willmore flow of tori of revolution</i> (YOUTUBE VIDEO)	Online (University Salzburg)
07/2021	Applied Analysis Seminar Heidelberg <i>The biharmonic Alt-Caffarelli problem</i> (LINK)	Online (Heidelberg University)
09/2021	DMV-Tagung, Sektion "Variationsrechnung, geometrische Analysis" <i>Embeddedness-breaking of elastic flows</i>	Online (University of Passau)
10/2021	Probability, Differential Geometry and Mathematical Physics <i>Embeddedness-breaking of elastic flows</i> (LINK)	Online (Texas Tech University)
12/2021	Oberseminar Angewandte Mathematik <i>An obstacle problem for the p-elastic energy</i> (LINK)	Freiburg University
12/2021	Geometric PDEs in Freiburg <i>Curvature minimization with perpendicular free boundary</i> (LINK)	Freiburg University
01/2022	TiTech analysis seminar <i>The Poisson equation involving surface measures</i> (LINK)	Tokyo Institute of Technology
02/2022	Geometric analysis seminar <i>An obstacle problem for the p-elastic energy</i> (LINK)	Online (OVGU Magdeburg)
03/2022	SIAM Conference on Analysis of PDE, Section 'Curvature energies' <i>Curvature minimization with perpendicular free boundary</i> (LINK)	Online (Berlin)
04/2022	Geometric Analysis Festival <i>An obstacle problem for the p-elastic energy</i> (YOUTUBE VIDEO)	Online
09/2022	Summer School "Horizons in nonlinear PDE" <i>The Poisson equation involving surface measures</i> (LINK)	Ulm University
11/2022	Oberseminar Analysis <i>Elliptic equations with surface measures</i> (LINK)	Leipzig University
11/2022	Research Seminar Analysis <i>Embeddedness-breaking of elastic flows</i> (LINK)	Chemnitz University
12/2022	Jeunes Matematicien.ne.es en Geometrie et Analyse <i>Elliptic PDEs with surface measures</i> (LINK)	Mulhouse
01/2023	FHST meeting <i>Embeddedness-breaking of elastic flows</i> (LINK)	Tübingen

Organized Workshops

2018 & 2019	Ulm PhD networking workshop sponsored by PROMOS (by DAAD) joint with M. Sauter (Ulm). (CLICK FOR INFORMATION)	Kleinwalsertal, Austria
04/2021	Online Poster Session "Young researchers in PDE and geometric analysis" joint with P. Gladbach and S. Jarohs (CLICK FOR INFORMATION)	Online (Freiburg University)

Posters

- 2019 **Elastica in the hyperbolic plane** ([LINK](#))
- 2020 **A biharmonic Bernoulli problem** ([LINK](#))

List of Teaching Experience

2012-2016	Several jobs as Grader & Tutor Including tutorials for a total of 11 modules. Among those the 4-week University preparation course ‘Uni-Trainingscamp’ (LINK) and exam preparation tutorials (‘Repetitorien’).	Ulm University
2016	Teaching Assistant Orientations 4-week pedagogical training prior to US-teaching assistant positions	Syracuse University, USA
Fall 2016	Teaching Assistant “Calculus 3” Bachelor’s course, course instructor: Loredana Lanzani. Responsibilities: Tutorial sessions, grading of weekly quizzes and midterm exams.	Syracuse University, USA
Spring 2017	Teaching Assistant “Calculus 2” Bachelor’s course, course instructor: Jeff Meyer. Responsibilities: content and grading of weekly quizzes, grading of midterm exams, tutorial sessions.	Syracuse University, USA
Summer 2017	Teaching Assistant “Elemente der Funktionalanalysis” ($\hat{=}$ Elementary Functional Analysis). Bachelor’s course, course Instructor: Jochen Glück. Responsibilities: content and solutions of exercise sheets and presentation thereof. (LINK)	Ulm University
Summer 2017	Teaching Assistant “Elemente der Funktionentheorie” ($\hat{=}$ Elementary Complex Analysis). Bachelor’s course, course instructor: Friedmar Schulz. Responsibilities: content and solutions of exercise sheets and presentation thereof.	Ulm University
Winter 2017	Teaching Assistant “Variationsrechnung” ($\hat{=}$ Calculus of Variations). Master’s course, course Instructor: Anna Dall’Acqua. Responsibilities: content and solutions of exercise sheets and presentation thereof.	Ulm University
Summer 2018	Teaching Assistant “Elementare Differenzialgeometrie” ($\hat{=}$ Elementary Differential Geometry). Bachelor’s course, course instructor: Julian Scheuer. Responsibilities: solutions of exercise sheets and presentation thereof (LINK).	Ulm University
Winter 2019	Teaching Assistant “Advanced Topics in the Calculus of Variations” Master’s course, course instructors: Anna Dall’Acqua and Emil Wiedemann. Responsibilities: content and solutions of exercise sheets (LINK).	Ulm University
Summer 2020	Teaching Assistant “Riemann’sche Geometrie” ($\hat{=}$ Riemannian Geometry). Master’s course, course Instructor: Anna Dall’Acqua. Responsibilities: content and solutions of exercise sheets, screencast video content.	Online (Ulm University)
Winter 2020	Teaching Assistant “Analysis 3” Bachelor’s course, course instructor: Ernst Kuwert. Responsibilities: video solutions to exercise sheets, content of in-class quizzes, tech support. (LINK) Teaching Award “Lehrpreis der Fachschaft Mathematik”	Online (Freiburg University)
Winter 2020	Assistant for Student Seminar “Geometrie ebener Kurven” ($\hat{=}$ Geometry of plane curves). Master’s course, instructor: Ernst Kuwert. Responsibilities: support of students in preparation of their talks.	Online (Freiburg University)
Summer 2021	Teaching Assistant “Elementare Differentialgeometrie” ($\hat{=}$ Elementary Differential Geometry). Bachelor’s & master’s course, instructor: Ernst Kuwert. Responsibilities: Video solutions to exercise sheets, content of in-class quizzes, tech support. (LINK)	Online (Freiburg University)
Summer 2021	Assistant for Student Seminar “Differentialformen” ($\hat{=}$ Differential forms). Master’s course, instructor: Ernst Kuwert. Responsibilities: Preparatory online lectures, support of students in preparation of their talks.	Online (Freiburg University)
Winter 2021	Lecturer “Gewöhnliche Differentialgleichungen” ($\hat{=}$ Ordinary Differential Equations). Bachelor’s course. Responsibilities: Course instructor – content of lectures and exercises. (LINK)	Freiburg University and Online
Summer 2022	Teaching Assistant “Kurven und Flächen” ($\hat{=}$ Curves and surfaces). Bachelor’s course, instructor: Christian Ketterer. Responsibilities: Exercise classes. (LINK)	Freiburg University
Summer 2022	Assistant for Seminar “Analysis” ($\hat{=}$ Curves and surfaces). Bachelor’s course, instructor: Guofang Wang. Responsibilities: Support of students in preparation of their talks.	Freiburg University

List of Teaching Experience – cont'd

Winter 2022	Lecturer “Gewöhnliche Differentialgleichungen” ($\hat{=}$ Ordinary Differential equations). Bachelor’s basic course. Responsibilities: Course instructor — content of lectures and exercises	Leipzig University
Winter 2022	Course instructor “Seminar zur Schulmathematik – Ebene Kurven” ($\hat{=}$ Seminar for math education students – geometry of planar curves). Seminar course. Responsibilities: Preparing and assigning projects and supervision of students.	Leipzig University