









Marius Müller

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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](#)).
-  As a postdoc: member of a hiring committee as Mittelbau representative
-  AMS MathSciNet Reviewer.
Referee activities for "Comm. Anal. Geom.", "Math. Eng.", "Interfaces Free Bound.", "Appl. Math.", "J. Geom. Anal."

Education and Academic Background

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

Working Experience

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

Awards

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

Selected Grants

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

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. 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 (Link)	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
Summer 2022	Course instructor “Funktionentheorie” ($\hat{=}$ Complex Analysis). Bachelor’s basic course. Responsibilities: Course instructor — content of lectures and exercises	Leipzig University