





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."

 Currently: Math Club for high school students "Mathezirkel 10. Klasse" (CLICK FOR INFORMATION)

Education and Academic Background

Aug 2023 – now **Mittelbau position (Institutskoordinator)** Augsburg University
Mathematisches Institut.

Oct 2022 – Jul 2023 **Substitute Professor (Vertretungsdozent)** Leipzig University
Abteilung Analysis.

Oct 2020 – Jul 2022 **Postdoc Position (Akad. Rat auf Zeit)** Freiburg University
Institut für Reine Mathematik,
Group "Analysis" (Ernst Kuwert and Guofang Wang).

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.

Aug 2016 – May 2017 **M.Sc. "Mathematics"** Syracuse University, USA
Double Degree Exchange Program. GPA: A.

Feb 2015 – Jul 2016 **M.Sc "Mathematik"** Ulm University
Minor Subject: Physics. GPA: 1,0.
Master Thesis:
Anisotropic Curvature.
Supervisor: Anna Dall'Acqua.

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.

2011 **High School "Allgemeine Hochschulreife"** Gymnasium Lindlar
GPA: 1,7.

Awards

2022 **PhD Thesis Award** Ulm University
"Promotionspreis der Ulmer Universitätsgesellschaft", 1500 €. (CLICK FOR INFORMATION)

2021 **Teaching Award** Freiburg University
"Lehrpreis der Fachschaft Mathematik WiSe20/21." (CLICK FOR INFORMATION)

2017 **Graduation Award** Ulm University
"Absolventenpreis Mathematik M.Sc. 2017 Uni Ulm."

Selected Grants

2017–2020 **LGFG Grant** Ulm University
PhD income grant, LGFG \cong "Landegraduiertenförderungsgesetz", grant no. 1705 LGFG-E.

2016 **Fulbright Travel Grant** Fulbright Association
Travel expenses for exchange year in Syracuse, NY, USA.

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](#)) ([ERRATUM](#))
- 2022 **7. The biharmonic Alt-Caffarelli Problem in 2D**
M. Müller
Ann. Mat. Pura Appl. **201**. DOI: 10.1007/s10231-021-01178-3 ([CLICK](#))
- 2023 **8. Optimal thresholds for preserving embeddedness of elastic flows**
T. Miura, M. Müller and F. Rupp
Accepted for publication in Amer. J. Math. [CLICK HERE TO VIEW PREPRINT](#)
- 2023 **9. Polyharmonic equations involving surface measures**
M. Müller
Interfaces Free Bound. DOI 10.4171/IFB/503 ([CLICK](#))
- 2023 **10. The Willmore flow of tori of revolution**
A. Dall'Acqua, M. Müller, R. Schätzle and A. Spener
Accepted for publication in Analysis & PDE. [CLICK HERE TO VIEW PREPRINT](#)
- 2023 **11. On elliptic equations involving surface measures**
M. Müller
Ann. Sc. Norm. Super. Pisa Cl. Sci. (ahead of print) DOI: 10.2422/2036-2145.202303_012 ([CLICK](#))
- 2024 **12. A biharmonic analogue of the Alt-Caffarelli problem**
H. C. Grunau and M. Müller
Math. Annalen DOI: 10.1007/s00208-024-02883-z

Preprints

- 2022 **13. An obstacle problem for the p -elastic energy**
A. Dall'Acqua, M. Müller, S. Okabe and K. Yoshizawa
[CLICK HERE TO VIEW PREPRINT](#)
- 2022 **14. Curvature varifolds with orthogonal free boundary**
E. Kuwert and M. Müller
[CLICK HERE TO VIEW PREPRINT](#)
- 2023 **15. Short closed geodesics and the Willmore energy**
M. Müller, F. Rupp and C. Scharrer
[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
03/2023	Geometry Day Leipzig <i>The Willmore flow of tori of revolution</i> (LINK)	Leipzig
07/2023	Oberseminar Differentialgeometrie <i>Short closed geodesics and the Willmore energy</i> (LINK)	Augsburg
07/2023	n-Cities Seminar <i>The biharmonic Alt-Caffarelli problem</i> (LINK)	Halle

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	Course Instructor “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	Course Instructor “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 2023	Course Instructor “Funktionentheorie” ($\hat{=}$ Complex Analysis). Bachelor’s basic course. Responsibilities: Course instructor — content of lectures and exercises	Leipzig University
Summer 2023	Seminar Assistant “Mathematics and Climate” Master’s course (in mathematical physics). Course instructor: Laszlo Szekelyhidi. Responsibilities: Support of students in preparation of their seminar talks	Leipzig University
Winter 2023	Course Instructor “Analysis 1” Bachelor’s basic course. Responsibilities: Course instructor – content of lectures and exercises.	Augsburg University
Winter 2023	Supervision “Offener Matheraum – Kernzeit Lehramt” ($\hat{=}$ Homework aid center for math education students) Responsibilities: Homework help and individual support for math education students.	Augsburg University
Winter 2023	Supervision “Betriebspraktikum Mathematik und Wirtschaftsmathematik” ($\hat{=}$ Mandatory internship) Responsibilities: Communication of job opportunities, review of internship reports.	Augsburg University
Summer 2024	Course Instructor “Analysis 2” Bachelor’s basic course. Responsibilities: Course instructor – content of lectures and exercises.	Augsburg University