





Marius Müller

 June 14, 1993 in Engelskirchen, Germany

 Universitätsstraße 14, 86159 Augsburg



 www.mariusmueller.art



 marius1.mueller@uni-a.de



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

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
($\hat{=}$ "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 $\hat{=}$ "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](#))

Preprints

- 2022 **12. An obstacle problem for the p -elastic energy**
A. Dall'Acqua, M. Müller, S. Okabe and K. Yoshizawa
[CLICK HERE TO VIEW PREPRINT](#)
- 2022 **13. Curvature varifolds with orthogonal free boundary**
E. Kuwert and M. Müller
[CLICK HERE TO VIEW PREPRINT](#)
- 2023 **14. A biharmonic analogue of the Alt-Caffarelli problem**
H. C. Grunau 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

| | | |
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| 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

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|-------------|--|------------------------------|
| 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

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| 2019 | Elastica in the hyperbolic plane (LINK) |
| 2020 | A biharmonic Bernoulli problem (LINK) |

List of Teaching Experience

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| 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

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| 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 |