Florian Noah Gruen - Curriculum Vitae

Personal Data

Mail	gruen.florian.32r@st.kyoto-u.ac.jp, flo.gruen.fds@gmail.com
Website	`https://cathelion.github.io`, `https://www.linkedin.com/in/florian-gruen-3a4212194/`
Date of birth	12.08.1998 in Karlsruhe, Germany; German citizenship
Research interests	calculus of variations, PDEs, elasticity theory, shape optimization, free boundary problems
Programming	proficient: Python, Latex basic: Java, MATLAB, C++, Mathematica, Julia
Languages	German (C2), English (C1), Swedish (C1), French (B2), Japanese (B2 - JLPT N2 Certificate)

Education

Apr 2024 –	PhD in Mathematics (Kyoto University, Japan) ↪ Advisor: Prof. Tatsuya Miura
Feb 2024	MSc in Mathematics with minor in Computational Science & Engineering (EPF Lausanne, Switzerland): GPA 5.63 ↪ Thesis: "Regularity of the one-phase problem" (Dr. Xavier Fernández-Real) ↪ Project 2: "On the continuous and discrete gradient conjecture" (Prof. Nicolas Boumal, Quentin Rebjock) ↪ Project 1: "Some regularity results for the obstacle problem" (Prof. Maria Colombo, Dr. Xavier Fernández-Real)
Jul 2021	BSc in Mathematics (Lund University, Sweden): Pass with distinction ↪ Thesis: "Optimality gaps and regularity for one-dimensional variational problems" (Prof. Andrey Ghulchak)

Publications

3. "Regularity and structure of non-planar p-elasticae" (with Tatsuya Miura)
   to appear in *Math. Ann.* | *arXiv:2501.07987*

2. "Continuity up to the boundary for minimizers of the one-phase Bernoulli problem" (with Xavier Fernández-Real)
   Calc. Var. Partial Differential Equations 64, 166 (2025) | *arXiv:2408.10019*

1. "Non-sufficiency of smoothness in the gradient conjecture"
   Appl. Math. E-Notes, 25(2025), 88-93 | *arXiv:2408.10582*

Research Projects

Jul–Sep 2023	REU at the Einstein Institute/Hebrew University of Jerusalem, Israel ↪ "Gamma-convergence and energy estimates in elasticity" (Prof. Cy Maor)
Aug–Sep 2022, Feb 2023	REU at Bremen/Hamburg University, Germany ↪ "Pulse waves in partial differential equations" (Prof. Jens Rademacher)

Teaching

Teaching Assistant	Kyoto University (in English): "Calculus A" (Spring 2024), "Calculus B" (Fall 2024) EPFL (in French): "Advanced Analysis I" (Fall 2023)

Scholarships and Awards

Apr 2024	Honjo International Scholarship for doctoral students (3 years duration)
Jul 2016	Kepler-Gymnasium Freundenstadt Fachpreis Physik (highest grades in physics during high school)

Seminars, workshops and conferences attained

Sep 2025	*Mathematical Society of Japan Annual Meeting* at Nagoya University, Japan ↪ Talk: "Regularity and structure of non-planar p-elasticae" (in Japanese)
Sep 2025	The 46th Evolution Equations Young Researchers (Wakate) Seminar, Saitama, Japan ↪ Talk: "Continuity up to the boundary for minimizers of the one-phase Bernoulli problem" (in Japanese)
Jul 2025	*The Theory of Periodic Tangles and Their Interdisciplinary Applications* at AIMR/Tohoku University, Japan ↪ Talk: "Regularity and structure of non-planar p-elasticae"
May 2025	*Workshop Nonlinear Bending II* at Freiburg University, Germany ↪ Talk: "Regularity and structure of non-planar p-elasticae"
May 2025	*Oberseminar Applied Analysis* at Ulm University, Germany ↪ Talk: "Regularity and structure of non-planar p-elasticae"
Jan 2025	*Westlake Winter School in Geometric Measure Theory* at Westlake University, Hangzhou, China ↪ Talk: "Regularity and structure of non-planar p-elasticae"
Nov 2024	*The 1st MMS Workshop for Young Researchers* at Kyoto University, Japan ↪ Poster: "Regularity and structure of non-planar p-elasticae"
Nov 2024	*Geometric Analysis and Phenomena* at Kyoto University, Japan ↪ Talk: "Regularity and structure of non-planar p-elasticae"
Oct 2024	*JSAIM Interdisciplinary Research Exchange Meeting* at Tokyo Institute of Technology, Japan ↪ Poster: "Regularity and structure of non-planar p-elasticae"
Sep 2024	Workshop *"Calculus of Variations: A New Generation"* at HCM/Bonn University, Germany
Sep 2024	*Pisa-Freiburg school in Applied Analysis* at Pisa University, Italy ↪ Poster: "Regularity and Structure of non-planar p-elasticae"
Aug 2024	*HPRT 2024 Summer School*, Workshop: *The Mathematics of Shapes* at Hokkaido University, Japan ↪ Talk: "Continuity up to the boundary for minimizers of the one-phase Bernoulli problem"
Feb 2023	*Applied Analysis Seminar* at Hamburg University, Germany ↪ Talk: "Sufficient conditions for spikes in the FitzHugh-Nagumo system"
Sep 2023	*Weizmann PDEs Day* at Weizmann Institute of Science, Rehovot, Israel
Sep 2022	*Horizons in non-linear PDEs* at Ulm University, Germany
Aug 2022	*Gene Golub SIAM Summer School 2022* at Gran Sasso Science Institute, Italy ↪ Poster: "The obstacle problem and optimal stopping"
Jul 2022	*Free boundary problems and related topics* at ETH Zürich, Switzerland