

Florian Noah Gruen - Curriculum Vitae

Personal Data

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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, 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 N3 Certificate)

Education

Apr 2024 –	PhD in Mathematics (Kyoto University, Japan) ↪ Advisor: Prof. Tatsuya Miura
Feb 2024	MSc in Mathematics with minor in CSE (EPFL 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)
submitted | *arXiv:2501.07987*
2. “Continuity up to the boundary for minimizers of the one-phase Bernoulli problem” (with Xavier Fernández-Real)
submitted | *arXiv:2408.10019*
1. “Non-sufficiency of smoothness in the gradient conjecture”
Appl. Math. E-Notes, 25(2025), 88-93 (2024) | *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)
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Scholarships and Awards

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

Seminars, workshops and conferences attained

Jan 2025	<i>Westlake Winter School in Geometric Measure Theory</i> at Westlake University, Hangzhou, China ↪ Talk: “Regularity and structure of non-planar p -elasticae”
Nov 2024	<i>The 1st MMS Workshop for Young Researchers</i> at Kyoto University, Japan ↪ Poster: “Regularity and structure of non-planar p -elasticae”
Nov 2024	<i>Geometric Analysis and Phenomena</i> at Kyoto University, Japan ↪ Talk: “Regularity and structure of non-planar p -elasticae”
Oct 2024	<i>JSAIM Interdisciplinary Research Exchange Meeting</i> at Tokyo Institute of Technology, Japan ↪ Poster: “Regularity and structure of non-planar p -elasticae”
Sep 2024	Workshop “ <i>Calculus of Variations: a New Generation</i> ” at HCM/Bonn University, Germany
Sep 2024	<i>Pisa-Freiburg school in Applied Analysis</i> at Pisa University, Italy ↪ Poster: “Regularity and Structure of non-planar p -elasticae”
Aug 2024	<i>HPRT 2024 Summer School, Workshop: The Mathematics of Shapes</i> at Hokkaido University, Japan ↪ Talk: “Continuity up to the boundary for minimizers of the one-phase Bernoulli problem”
Feb 2023	<i>Applied Analysis Seminar</i> at Hamburg University ↪ Talk: “Sufficient conditions for spikes in the FitzHugh-Nagumo system”
Sep 2023	<i>Weizmann PDEs Day</i> at Weizmann Institute of Science, Rehovot, Israel
Sep 2022	<i>Horizons in non-linear PDEs</i> at Ulm University, Germany
Aug 2022	<i>Gene Golub SIAM Summer School 2022</i> at Gran Sasso Science Institute, Italy ↪ Poster: “The obstacle problem and optimal stopping”
Jul 2022	<i>Free boundary problems and related topics</i> at ETH Zürich, Switzerland