

IZAK OLTMAN

ioltman@northwestern.edu \diamond ioltman.github.io

RESEARCH INTERESTS

Semiclassical analysis and random perturbations of non-self-adjoint operators.

EMPLOYMENT

Northwestern University

Fall 2024 - Present

NSF RTG Fellow and Boas Assistant Professor

Postdoc Supervisor: Jared Wunsch

EDUCATION

University of California, Berkeley

Fall 2019 - Spring 2024

Ph.D. in Mathematics

Advisor: Maciej Zworski

University of Wisconsin, Madison

Fall 2015 - Spring 2019

Bachelor of Arts – College of Letters and Science

Major in Mathematics with Honors

Certificate in Physics

Budapest Semesters in Mathematics

Spring 2018

Budapest, Hungary

AWARDS

NSF Graduate Research Fellowship

2021 - 2024

Dowling Scholarship - UW Madison Math Department

2018

Dean's List - UW Madison

2015 - 2019

Vilas Scholarship - UW Madison

2015 - 2018

AMETEK Scholarship

2015 - 2019

Green House Summer Research Scholarship - UW Madison

Summer 2016

PUBLICATIONS AND PREPRINTS

7. *The spectrum of the Scottish flag operator* with Frédéric Klopp (*in preparation*)
6. *Spectral instability of random Fredholm operators* with Simon Becker and Martin Vogel ([arXiv:2502.10222](https://arxiv.org/abs/2502.10222))
5. *Absence of small magic angles for disordered tunneling potentials in twisted bilayer graphene* with Simon Becker and Martin Vogel ([arXiv:2402.12799](https://arxiv.org/abs/2402.12799)) – *accepted for publication*
4. *Magic angle (in)stability and mobility edges in disordered Chern insulators* with Simon Becker and Martin Vogel ([arXiv:2309.02701](https://arxiv.org/abs/2309.02701)) – *submitted*
3. *Particle trajectories for quantum maps* with Yonah Borns-Weil ([arXiv:2210.03224](https://arxiv.org/abs/2210.03224)) – in **Annales Henri Poincaré**, 25.8(2023), 3699-3738
2. *A probabilistic Weyl-law for perturbed Berezin–Toeplitz operators* – in **Journal of Spectral Theory**, 13.2(2023), 727-754 ([arXiv:2207.09599](https://arxiv.org/abs/2207.09599))
1. *An exotic calculus of Berezin–Toeplitz operators* ([arXiv:2207.09596](https://arxiv.org/abs/2207.09596)) – to appear in **Mathematika**

TALKS/PRESENTATIONS

- *Probability and Analysis Seminar*. February 2025. University of Michigan, Ann Arbor.
- *Spectral Theory Seminar*. January 2025. UC Berkeley.
- *Joint Mathematics Meeting*. January 2025. Seattle, Washington.
- *International workshop on 2D and moiré materials*. July 2024. Roscoff, France.
- *Harmonic Analysis and Differential Equations Seminar*. February 2024. UC Berkeley.
- *Analysis Seminar*. November 2023. University of Strasbourg.
- *Spectral Theory Seminar*. November 2023. UC Berkeley.
- *Microlocal and Probabilistic Methods in Geometry and Dynamics Summer School (poster presentation)*. July 2023. Paris, France.
- *The 24th Midrasha Mathematicae Random Schrödinger Operators and Random Matrices (poster presentation)*. May 2023. IIAS Jerusalem.
- *Harmonic Analysis and Differential Equations Seminar*. April 2023. UC Berkeley.
- *PDE and Mathematical Physics Seminar*. November 2022. ETH Zurich.
- *Probability and Mathematical Physics Conference (poster presentation)*. July 2022. Helsinki, Finland.
- *Mathematical Challenges in Quantum Mechanics (poster presentation)*. June 2022. Como, Italy.
- *6th Great Lakes Mathematical Physics Conference*. June 2022. Michigan State University.
- *Harmonic Analysis and Differential Equations Seminar*. February 2022. UC Berkeley.

TEACHING

Instructor at Northwestern University

- Math 228-1: Multivariable Differential Calculus for Engineering (Fall 2024)

Graduate Student Instructor at UC Berkeley:

- Math 128a: numerical analysis (Spring 2021)
- Math 16a: calculus and analytic geometry (Fall 2021)
- Stat 134: concepts of probability (Summer 2020)
- Math 53: multivariable calculus (Spring 2020)
- Math 54: linear algebra and differential equations (Fall 2019)

CODING LANGUAGES

L^AT_EX, **MATLAB**, **Python**

SERVICE

Officer of Berkeley's Math Graduate Student Association (2020 - 2023)

Private Math Tutor for Berkeley Undergraduates (2019 - 2024)

Organizer of UC Berkeley's Semi-classical Analysis Seminar (2022)

Organizer of UC Berkeley's Harmonic Analysis and Differential Equations Student Seminar (2023 - 2024)