IZAK OLTMAN

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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
Qualifying Exam: Partial differential equations, harmonic analysis, and probability

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. *Randomly perturbed Fredholm operators of index* 0 with Simon Becker and Martin Vogel (*in preparation*)

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)) – *submitted*

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**, (2023), 10-40

2. *A probabilistic Weyl-law for perturbed Berezin–Toeplitz operators* **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)) – *submitted*

TALKS/PRESENTATIONS

- *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

LaTeX, 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)