

Nattalie Tamam

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Department of Mathematics,
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Research Interests

Diophantine Approximations, Dynamical Systems, Homogeneous Spaces, Lie Groups, and Number Theory.

Appointments

2021- **Postdoctoral Assistant Professor** Department of Mathematics, University of Michigan
2018–2021 **S.E.W Visiting Assistant Professor** Department of Mathematics, University of California, San Diego

Education

2013–2018 **Ph.D. in Pure Mathematics** Tel Aviv University
Advisor: Prof. Barak Weiss
Thesis Title: “Singular Vectors and Divergent Trajectories in Dimension Two”
2010–2012 **M.Sc. in Pure Mathematics** Tel Aviv University
Advisor: Prof. Zeev Rudnick
Thesis Title: “The Fourth Moment of Dirichlet L-Functions for the Rational Function Field”
Summa Cum Laude.
2007–2010 **B.Sc. in Pure Mathematics** Tel Aviv University
Summa Cum Laude.

Publications

- *Geometric interpretation of quantitative instability*,
Joint with Omri N. Solan, submitted, arXiv:2209.01475.
- *Property tau in positive characteristic*,
Joint with Amir Mohammadi, accepted for publication in the Israel Journal of Mathematics.
- *On Topologically Big Divergent Trajectories*,
Joint with Omri N. Solan, accepted for publication in Duke Mathematical Journal.
- *Distribution of orbits of geometrically finite groups acting on null vectors*,
Joint with J. M. Warren, Geometriae Dedicata volume 216, 12, 2022.
- *Effective equidistribution of horospherical flows in infinite volume rank one homogeneous spaces*,
Joint with J. M. Warren, Ergodic Theory and Dynamical Systems, 2022, 1–61.
- *Existence of Non-Obvious Divergent Trajectories in homogeneous spaces*,
Israel Journal of Mathematics, 2021.
- *Divergent trajectories in arithmetic homogeneous spaces of rank two*,
Ergodic Theory and Dynamical Systems, 2020, 1–26.
- *Hausdorff dimension of weighted singular vectors*,
Joint with L. Liao, R. Shi, O. N. Solan, Journal of the European Mathematical Society, 22 (2020),
no. 3, 833-875.
- *The fourth moment of Dirichlet L-functions for the rational function field*,
Int. J. Number Theory 10 (2014), no. 1, 183–218.

Awards and Scholarships

- 2017 The Eric and Wendy Schmidt Postdoctoral Award.
- 2015–2017 Shulamit Aloni Scholarship, Israel Ministry of Science and Technology.
- 2015, 2016 Included in the list of Best 100 Teaching Assistants of Tel Aviv University.
- 2013 Colton Award for Excellence, Tel Aviv University.
- 2011 Excellence Scholarship for M.Sc. students, School of Mathematical Sciences, Tel Aviv University.
- 2008, 2010 Dean’s list for B.A. students, Faculty of Exact and Natural Sciences, Tel Aviv University.
- 2008 Honors Prize for B.A. students, School of Mathematical Sciences, Tel Aviv University.

Outreach

- 2022 **University of Michigan, Research Experience for Undergraduates (REU)**
Mentoring an undergraduate student in a research project about the existence of singular vectors in \mathbb{R}^4 .
- 2018 **Tel-Aviv University Women in Mathematics**
Conducted an introductory talk about Homogeneous dynamics and its connection to number theory. This was a part of a series of introductory talks aimed to encourage women to pursue academic studies and careers.
- 2017,2018 **Israel Student Chapter of the AWM**
Co-organized two summer conferences.

Teaching Experience

Calculus

- Math 115 - University of Michigan
- Math 20B - University of California, San Diego
- Math 20D - University of California, San Diego

Linear Algebra

- Math 18 - University of California, San Diego
- Math 102 - University of California, San Diego

Mathematical Reasoning

- Math 109 - University of California, San Diego

Harmonic Analysis

- Tel Aviv University

Additional experience as a teaching assistant in Tel Aviv University in various classes including Linear Algebra, Calculus, ODE, Complex Analysis, and Introduction to Probability

Invited Talks

- 2022 Dynamics Seminar, University of Chicago, April
- 2022 Groups, Geometry and Dynamics, IUPUI in Indianapolis, April
- 2022 New England Dynamics and Number Theory Seminar, Virtual, March
- 2021 Group Actions and Dynamics Seminar, Yale University, September
- 2021 Webinar on Diophantine approximation and homogeneous dynamics, University of Bristol, May
- 2021 Ergodic Theory Seminar, University of North Carolina, March

2021 Probability and Ergodic Theory Seminar, Ben Gurion University, March
 2021 Zoom Dynamical Systems Seminar, The Pennsylvania State University, March
 2020 Online Dynamics Seminar, University of Wisconsin-Madison, November
 2020 Number Theory Seminar, Rutgers University, November 2020
 2020 Expanding Dynamics Workshop, Virtual, November
 2020 New England Dynamics and Number Theory Seminar, Virtual, September
 2020 RTG colloquium, University of California, San Diego, May
 2020 Pacific Dynamics Seminar, University of Washington, April
 2020 Dynamics on Homogeneous Spaces Conference, Hausdorff Research Institute for Mathematics, March
 2019 Workshop on Dynamical Systems and Related Topics, University of Maryland, April
 2019 Groups, Dynamics and Related Topics Seminar, Technion Institute of Technology, Haifa, March
 2019 Dynamics Seminar, Hebrew University, Jerusalem, March
 2019 Ergodic Theory Workshops, University of North Carolina at Chapel Hill, January
 2017 Ergodic Theory and Probability Seminar, Hebrew University, Jerusalem, November
 2017 Dynamics and Group Actions Seminar, Yale University, New Haven, October
 2017 Geometry seminar, The University of Michigan, Michigan, October
 2017 Ergodic Theory seminar, The Ohio State University, Ohio, October
 2017 Dynamics Seminar, The University of Chicago, Chicago, October
 2017 Geometry and Dynamics Seminar, Harvard University, Boston, October
 2017 Dynamics and Number Theory Seminar, Brandeis University, Boston, October
 2017 Dynamical Systems Seminar, Tufts University, Boston, October
 2017 NYC Dynamics Seminar, Yeshiva University, New York, September
 2017 Homogeneous Dynamics Seminar, Tel Aviv University, Israel, April
 2017 Reading Seminar, Bristol University, United Kingdom, February
 2017 Ergodic Theory and Dynamical Systems Seminar, Bristol University, United Kingdom, February
 2017 Number Theory Seminar, York University, United Kingdom, January

- 2016 Homogeneous Dynamics Seminar, Tel Aviv University, Israel, November
- 2016 Arbeitsgemeinschaft: Diophantine Approximation, Fractal Geometry and Dynamics, Oberwolfach, Germany, October
- 2015 Annual Meeting of the Israel Mathematical Union, Dead Sea, Israel, May