

TARIQ OSMAN

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EMPLOYMENT

Instructor in Mathematics *Brandeis University*

August 2022 - Present

EDUCATION

Ph.D. *Queen's University, Canada*

September 2017 - August 2022

Supervisor: Prof. Francesco Cellarosi

Thesis Title: Tail Asymptotics for the Limiting Distribution of Theta Sums

M.Sc. *Warwick University, Coventry*

October 2015 - October 2016

Supervisor: Prof. Richard Sharp

Thesis Title: The Oppenheim Conjecture

B.Sc. Mathematics *University of the West Indies, St. Augustine*

September 2012 - July 2015

PUBLICATIONS AND PREPRINTS

- **Improved Tail Estimates for the Distribution of Quadratic Weyl Sums** (with F. Cellarosi and J. Griffin). *To appear in the special issue "Advances in Dynamical systems by the DinAmicI group" of the Bollettino dell'Unione Matematica Italiana.*
- **Bounds for Smooth Theta Sums with Special Rational Parameters** (with F. Cellarosi). *To Appear in Journal of Number Theory.*
- **Heavy tailed and compactly supported distributions of quadratic Weyl sums with rational parameters** (with F. Cellarosi). *Submitted*
- **An Effective Slope Gap Distribution for Lattice Surfaces** (with J. Southerland and J. Wang) *preprint*
- **Limit Theorems and Tail Estimates for Siegel Theta Series** (with J. Griffin and J. Marklof). *In preparation.*
- **Bounds for Smooth Siegel Theta Series with Special Rational Parameters** (with M. Lu, as part of MIT PRIMES). *In preparation.*

TALKS

- **University of Wisconsin, Madison, Dynamics Seminar** *November 2020*
Limit Theorems for Quadratic Weyl Sums
- **Chapel Hill Ergodic Theory Workshop** *June 2021*
Tails of Generalised Quadratic Weyl Sums
- **Maine-Québec Number Theory Conference** *October 2021*
A New Bound for a Particular Family of Quadratic Weyl Sums
- **DinAmicI VII** *June 2022*
Tail Asymptotics for Generalised Theta sums with Rational Parameters
- **Brandeis University Dynamics and Number Theory Seminar** *December 2022*
Tail Asymptotics for Generalised Theta sums with Rational Parameters

- **UC San Diego Group Actions Seminar** *April 2024*
Limit Theorems for Theta Sums
- **Maine-Québec Number Theory Conference** *October 2024*
Tails of Smoothed Siegel Theta Series
- **at Queen's University**
 - **Dynamics, Geometry, and Groups Seminar**
 - * Ergodicity of the Geodesic Flow via the Hopf argument *September 2017*
 - * Quantum Ergodicity for Compact Hyperbolic Surfaces *October 2019*
 - * Tails of Generalised Quadratic Weyl Sums *October 2021*
 - **Number Theory Seminar**
 - * Counting Integer Points on Vinogradov's Quadric *March 2019*
 - * Limit Theorems for Quadratic Weyl Sums *November 2020*
 - * Tails of Generalised Quadratic Weyl Sums *April 2021*
 - * A New Bound for a Particular Family of Quadratic Weyl Sums *September 2021*
 - **Graduate Student Seminar**
 - * The Gauss Map and Circle Rotations *November 2017*
 - * Fubini Foiled: Katok's Paradoxical Example in Measure Theory *October 2018*
 - * Cutting Sequences and the Dynamical Duo *March 2019*
 - * The Three Gap Theorem and the Space of Lattices *Nov 2020*
 - * Prime Numbers and the Riemann Zeta Function *January 2021*

CONFERENCES AND SUMMER SCHOOLS

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| Conference on Mathematical Physics Perspective of Billiards and Dominoes
University of Massachusetts | <i>September 2017</i> |
| 2017 Fields Medal Symposium: In Honour of Martin Hairer
The Fields Institute | <i>October 2017</i> |
| Summer School in Dynamics (Introductory and Advanced), ICTP | <i>July 2018</i> |
| Summer School on Teichmüller Theory and its Connections to Geometry,
Topology and Dynamics, The Fields Institute | <i>August 2018</i> |
| 2018 Workshop in Dynamical Systems and Related Topics
Penn State, University Park | <i>October 2018</i> |
| 2018 Fields Medal Symposium: In Honour of Maryam Mirzakhani
The Fields Institute | <i>November 2018</i> |

2019 Fields Medal Symposium: In Honour of Artur Avila The Fields Institute	<i>November 2019</i>
2020 CMS Winter Meeting Online	<i>Dec 2020</i>
2021 Chapel Hill Ergodic Theory Workshop Online	<i>June 2021</i>
2021 Maine-Québec Number Theory Conference Online	<i>October 2021</i>
DinAmicI VII Riemann International School of Mathematics	<i>June 2022</i>
A Dynamical Weekend at Wesleyan Wesleyan University	<i>March 2023</i>
Dynamics, Rigidity and Arithmetic in Hyperbolic Geometry ICERM	<i>May 2023</i>
Dynamics: Classical, Modern, and Quantum Northwestern University	<i>July 2023</i>
2024 Workshop in Dynamical Systems and Related Topics University of Maryland	<i>April 2024</i>
Maine-Québec Number Theory Conference Université Laval	<i>October 2024</i>
2024 Workshop in Dynamical Systems and Related Topics Penn State, University Park	<i>November 2024</i>

TEACHING EXPERIENCE

At Brandeis University

- Functional Analysis (MATH 262B) *Fall 2022, Fall 2024*
- Intro. to Probability and Statistics (MATH 8A) *Spring 2023*
- Math Puzzles and Games (MATH 9B) *Spring 2023, Spring 2024*
- Graduate Real Analysis (MATH 211A) *Fall 2023*
- Intro. to Real Analysis (MATH 110A) *Fall 2023*

At Queen's University (A * indicates that the sessions were run online)

- *Intro. to Differential Equations (MATH 225) *Summer 2020*
- Differential and Integral Calculus (MATH 120) *Fall 2021*
- *Intro. to Differential Equations (MATH 225) *Summer 2022*