Pax Kivimae

CONTACT INFORMATION

Courant Institute of Mathematical Sciences
New York University
251 Mercer St,
New York, NY 10012, USA

pax.kivimae@cims.nyu.edu
kivimae.github.io
(+1) 415 755 3744

RESEARCH INTERESTS

Probability Theory, Statistical Physics, Random Matrix Theory, Spin Glasses

EMPLOYMENT

Courant Institute of Mathematical Sciences — *New York, NY, USA*
NSF Postdoctoral Fellow — September 2022 - Current

EDUCATION

Northwestern University — *Evanston, IL, USA*
Ph.D., Mathematics — September 2016 - July 2022
Advisor: Antonio Auffinger

University of California, Los Angeles — *Los Angeles, CA, USA*
B.S. and M.A., Mathematics — August 2012 - June 2016

PAPERS

1. G. Ben Arous, P. Kivimae, *Wandering Exponents and The Free Energy of High-Dimensional Elastic Polymers*, to be submitted.

2. G. Ben Arous, P. Kivimae, *The Larkin Mass and Replica Symmetry Breaking in the Elastic Manifold*, arXiv:2410.22601 *submitted: Annals of Probability*, pgs. 53

3. G. Ben Arous, P. Kivimae, *Free Energy of the Elastic Manifold*, arXiv:2410.19094 *submitted: Annales de Toulouse*, pgs. 81

4. P. Kivimae, *Moments of Characteristic Polynomials of Non-Symmetric Random Matrices*, arXiv:2410.07478, *submitted: Journal of Statistical Physics*, pgs. 26

5. P. Kivimae, *Concentration of Equilibria and Relative Instability in Disordered Non-Relaxational Dynamics* (to appear in) Communications in Mathematical Physics, pgs. 65

6. P. Kivimae, *The Ground State Energy and Concentration of Complexity in Spherical Bipartite Models.* Communications in Mathematical Physics, 403(1):37–81, 2023

7. P. Kivimae, *Gaussian multiplicative chaos for Gaussian orthogonal and symplectic ensembles*, Electronic Journal of Probability, 29:Paper No. 22, 71, 2024.

8. P. Kivimae, *Critical Fluctuations for the Spherical Sherrington-Kirkpatrick Model in an External Field*, arXiv:1908.07512, pgs. 28

TALKS

Relative Instability and the Number of Real Eigenvalues of A Random Tensor
Random Tensors and Related Topics, Institut Henri Poincaré — October 2024

Free Energy of The Elastic Random Manifold
Lehigh Probability Seminar — April 2024

The Larkin Mass and The Free Energy of The Elastic Manifold
Northeast Probability Seminar — November 2023

Relative Instability and Concentration of Equilibria in Non-Gradient Dynamics
Temple University/University of Pennsylvania Probability Seminar November 2023

Gaussian Multiplicative Chaos Limits for Random Symmetric Matrices
Summer School on Random Matrix Theory and Its Applications May 2023

Relative Instability and Concentration of Equilibria in Non-Gradient Dynamics
Montréal Probability Seminar February 2023

Concentration of Equilibria and Relative Instability in the Asymmetric p-Spin Model
New York University Probability Seminar December 2022

Gaussian Multiplicative Chaos Limits for Random Symmetric Matrices
University of Sussex Probability Seminar April 2022

The Ground-State Energy and Concentration of Complexity in Spherical Bipartite Models
University of Wisconsin: Madison Probability Seminar February 2022

Gaussian Multiplicative Chaos Limits for Gaussian Orthogonal and Symplectic Ensembles
University of Oxford: Random Matrix Theory Seminar January 2022

The Ground-State Energy and Concentration of Complexity in Spherical Bipartite Models
University of Basel Probability Seminar September 2021

Continuum Limits for Random Quadratic Optimization
Northeast Probability Seminar November 2019

Applications of Gamma Cohomology to Obstruction Theory
Talbot Workshop April 2017

POSTERS

The Larkin Mass and Free Energy of The Elastic Manifold
Cincinnati Symposium on Probability May 2024

Concentration of Equilibria and Relative Instability in the Asymmetric p-Spin Model
Southern California Probability Symposium May 2023

Concentration of Complexity for the Asymmetric p-spin Glass Model
Workshop on Spin Glasses, SwissMAP September 2022

AWARDS & HONORS

NSF Mathematical Sciences Postdoctoral Research Fellowship (2022)

Northwestern University Department of Mathematics Best Thesis Award (2022)

UCLA Sherwood Scholarship (2016)

UCLA Undergraduate Math Scholar Award (2014)

TEACHING

NEW YORK UNIVERSITY

(Fall 2024) Math-GA 2110: Linear Algebra I (Instructor)

(Spring 2023) Math-UY 4434: Applied Complex Variables (Instructor)

(Fall 2023) Math-UA 122: Calculus II (Instructor)

NORTHWESTERN UNIVERSITY

(Winter 2021) Math 334: Linear Algebra: Second Course (Teaching Assistant)

(Winter 2021) Math 290-2: Linear Algebra and Vector Calculus (Teaching Assistant)

(Fall 2021) Math 290-1: Linear Algebra and Vector Calculus (Teaching Assistant) (two sections)

(Fall 2019) Math 321-1: Real Analysis I (Teaching Assistant)

(Fall 2019) Math 410-1: Analysis (Teaching Assistant)

(Fall 2018) Math 311-1: Probability and Stochastic Processes (Teaching Assistant)

(Fall 2018) Math 410-1: Analysis (Teaching Assistant)

(Spring 2018) Math 334: Linear Algebra: Second Course (Teaching Assistant)

(Spring 2018) Math 281-3: Accelerated Mathematics for ISP (Teaching Assistant)

(Winter 2018) Math 382: Complex Analysis and Group Theory (Teaching Assistant)

(Winter 2018) Math 321-2: Real Analysis II (Teaching Assistant)

(Fall 2017) Math 240: Linear Algebra (Teaching Assistant) (two sections)