CHRISTOPHER E. H. LUTSKO

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BIOGRAPHICAL

Born: April 1994
Citizen: USA/UK
Spoken Languages: English, French (proficient), Spanish (proficient), German (beginner).

CAREER

University of Zurich 2023-2025
Postdoctoral researcher

Rutgers University 2020-2023
Hill Assistant Professor

EDUCATION

University of Bristol 2016-2020
PhD in Mathematics
Advisor: Jens Marklof

University of Texas at Austin 2012-2016
B.S Mathematics
Dean's Scholars Honors Program
William's Scholar Honored Graduate

PUBLICATIONS

Preprints:

13. *Mean square bounds on Eisenstein series* with D. Kelmer and A. Kontorovich, arXiv:2305.14162 (2022).
12. *An abstract spectral approach to horospherical equidistribution*, arXiv:2211.01900 (2022).
11. *Full poissonian local statistics of slowly growing sequences* , with N. Technau, arXiv:2206.07809 (2022).
10. *Effective counting in sphere packings*, with A. Kontorovich, arXiv:2205.13004 (2022)
9. *m-Point Correlations of the Fractional Parts of* αn^θ, with N. Technau, arXiv:2112.11524 (2021).

Papers:

8. *Sarnak's spectral gap question* , with D. Kelmer, and A. Kontorovich, arXiv:2210.13969 [Accepted for publication: Journal d'Analyze Mathématique] (2022).
7. *Pair correlation of the fractional parts of* αn^θ, with A. Sourmelidis, N. Technau, arXiv:2106.09800 [Accepted for publication: Journal of the European Mathematical Society] (2021).
6. *Long-range correlations of sequences modulo* 1, Journal of Number Theory, **234**, 333-348 (2022).
5. *Farey sequences for thin groups* International Mathematics Research Notices, **15**, 11642-11689 (2022).

4. *Invariance principle for the random wind-tree process*, with B. Tóth, Annales Henri Poincaré, **22**(10), 3357-3389 (2021).

3. *Invariance principle for the random Lorentz gas – beyond the Boltzmann-Grad limit*, with B. Tóth, Communications in Mathematical Physics, **379**, 589-632, (2020).

2. *Directions in orbits of geometrically finite hyperbolic subgroups* Mathematical Proceedings of the Cambridge Phil. Soc. **171**(2), 277-316 (2021)

1. *A microscopic approach to nonlinear Reaction-Diffusion: the case of morphogen gradient formation* with J.P. Boon, J.F. Lutsko, Physical Review E 85:021126 (2016)

PhD Thesis:

Statistical Properties of Dynamical Systems: From Statistical Mechanics to Hyperbolic Geometry, 2020 (Bristol University). [Nominated for doctoral dissertation prize]

Conference Proceedings:

1. *Invariance principle for random Lorentz gas in the Boltzmann-Grad Limit*, Oberwolfach Report 10/2019 p. 33-35 (2019)

2. *Invariance principle for random Lorentz gas — Beyond the Boltzmann-Grad Limit*, Oberwolfach Report 42/2019 p. 12-15 (2019)

TEACHING

Instructor:

Rutgers: Math 152 Calculus II (Math/Physics)	Spring 2023
Rutgers: Math 152 Calculus II (Math/Physics)	Spring 2023
Rutgers: Math 356 Theory of Numbers	Fall 2022
Rutgers: Math 437 History of Mathematics	Spring 2022
Rutgers: Math 152 Calculus II (Math/Physics)	Spring 2022
Rutgers: Math 356 Theory of Numbers	Fall 2021
Rutgers: Math 356 Theory of Numbers	Spring 2021
Rutgers: Math 152 Calculus II (Math/Physics)	Spring 2021
Rutgers: Math 152 Calculus II (Math/Physics)	Fall 2020

Teaching Assistant:

Bristol: Probability II	Fall 2018
Bristol: Measure Theory and Integration	Fall 2018
Bristol: Analysis & Group Theory - 2 groups	Spring 2018
Bristol: Analysis & Proofs - 2 groups	Fall 2017
Bristol: Calculus & Calculus & Mechanics - 2 groups	Spring 2017
Bristol: Calculus & Computational Mathematics - 2 groups	Fall 2016
Texas: Intro to Math	Spring 2016
Texas: Intro to Math	Fall 2015
Texas: Intro to Physics	Summer 2013

MENTORSHIP

Undergraduate reading programs:

Ozan Acikgoz	Spring 2021
Saketh Sitaram	Spring 2023 (Ongong)

ORGANIZATIONAL DUTIES

Organizer: Linfoot Number Theory Seminar (Bristol) Fall 2019 - Spring 2020
Organizer: Rutgers Number Theory Seminar Fall 2021 - Spring 2023

ACADEMIC INVITATIONS

1 week - Budapest University of Technology (BME) 2017
2 weeks - University of Bonn *(Upcoming)* 2023

SEMINAR TALKS

University of Bristol 2017
Budapest University of Technology 2017
University of Bristol 2017
University of Warwick 2018
University of Bristol 2018
University of Bristol 2018
Univ. Libre de Bruxelles 2018
University of Bristol 2018
Rutgers University 2019
University of Texas at Austin 2019
University of Houston 2019
University of Exeter 2019
Manchester University 2019
University of Bristol 2019
University of Loughborough 2020
University of Oklahoma 2020
Yeshiva University 2020
Rutgers University 2021
Tata Institute of Fundamental Research 2021
New England Dynamics and Number Theory Seminar 2021
(recording: `https://www.youtube.com/watch?v=EODTepggUuU`)
Hong Kong University 2022
University of Illinois Urbana-Champaign 2022
Stony Brook **Colloquium** 2022
(recording: `https://www.youtube.com/watch?v=SOHhKdno2jA`)
Rutgers University 2022
New England Dynamics and Number Theory Seminar 2022
(recording: `https://nednt.wescreates.wesleyan.edu/fall-2022-schedule/`)
University of Maryland 2022
Philadelphia Area Number Theory Seminar (Bryn Mawr) 2023
Rutgers University 2023
University of Bonn *(Upcoming)* 2023
Paderborn University *(Upcoming)* 2023

CONFERENCE TALKS

MINGLE post-graduate event - University of Bristol 2017
Dynamics Days Europe (Billiards Minisymposium) - University of Loughborough 2018
Probability and NonLocal PDEs - University of Swansea 2018
Mini-Workshop: Lorentz Gas Dynamics: particle systems and scaling limits - Mathematisches Forschunginstitut Oberwolfach 2019

Large Scale Stochastic Dynamics - Mathematisches Forschunginstitut Oberwolfach 2019
MINGLE post-graduate event - University of Bristol 2019

OUTREACH

- Volunteer Chemistry Tutor – Garza high school (Austin Texas) 2015
- Help with Bristol maths day 2018
- Participant in "Skype a Scientist" 2021
- Speaker at Chicago public schools teen mentoring program STEM event 2021
- Contributor to EMS magazine problems section 2022
- Help with Museum of mathematics' polyplane project 2023

REFEREEING/REVIEWING

- AMS Mathematical Reviews/MathSciNet [3 papers]
- Annales de l'Institut Henri Poincaré
- Chaos, Solitons and Fractals
- International Mathematics Research Notices
- Mathematical Proceedings of the Cambridge Philosophical Society
- Stochastic Processes and their Applications