# CHRISTOPHER E. H. LUTSKO

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## 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

## CAREER

**Rutgers University** 2020-2023
Hill Assistant Professor

## PUBLICATIONS

**Papers:**

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)
2. *Directions in orbits of geometrically finite hyperbolic subgroups* Mathematical Proceedings of the Cambridge Phil. Soc. [Available Online] (2020)
3. *Invariance principle for the random Lorentz gas – beyond the Boltzmann-Grad limit*, with B. Tóth, Communications in Mathematical Physics, **379**, 589-632, (2020).
4. *Invariance principle for the random wind-tree process*, with B. Tóth, Annales Henri Poincaré (2020) (To Appear).
5. *Farey sequences for thin groups* International Mathematics Research Notices (2020) (Available Online).
6. *Long-range correlations of sequences modulo* 1, Journal of Number Theory (2020) (To Appear).

**Preprints:**

1. *Pair correlation of the fractional parts of* $\alpha n^{\theta}$, with A. Sourmelidis, N. Technau, arXiv:2106.09800.

**PhD Thesis:**

Statistical Properties of Dynamical Systems: From Statistical Mechanics to Hyperbolic Geometry, 2020 (Bristol University).

**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

**Teaching Assistant:**

| | |
|---|---|
| UTexas: Intro to Physics | Summer 2013 |
| Garza High School: Volunteer Chemistry Tutor | Spring 2015 |
| UTexas: Intro to Math | Fall 2015 |
| UTexas: Undergraduate TA for Intro to Math | Spring 2016 |
| Bristol: Calculus & Computational Mathematics - 2 groups | Fall 2016 |
| Bristol: Calculus & Calculus & Mechanics - 2 groups | Spring 2017 |
| Bristol: Analysis & Proofs - 2 groups | Fall 2017 |
| Bristol: Analysis & Group Theory - 2 groups | Spring 2018 |
| Bristol: Measure Theory and Integration | Fall 2018 |
| Bristol: Probability II | Fall 2018 |

**Instructor:**

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|---|---|
| Rutgers: Math 152 Calculus II (Math/Physics) | Fall 2020 |
| Rutgers: Math 152 Calculus II (Math/Physics) | Spring 2021 |
| Rutgers: Math 356 Theory of Numbers | Spring 2021 |

## ORGANIZATIONAL DUTIES

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|---|---|
| Organizer: Linfoot Number Theory Seminar (UoB) | Fall 2019 - Spring 2020 |

## ACADEMIC INVITATIONS

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|---|---|
| 1 week - Budapest University of Technology (BME) | 2017 |

## SEMINAR TALKS

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|---|---|
| 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 |

## CONFERENCE TALKS

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|---|---|
| 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

- Participant in "Skype a Scientist".

## JOURNAL REFEREEING

- International Mathematics Research Notices
- Annales de l'Institut Henri Poincaré