Max Auer, PhD

Curriculum Vitae

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Education

Jan.2021–May2025 **PhD in Mathematics**, *University of Maryland, College Park, Department of Mathematics*, Advisors: Dmitry Dolgopyat and Adam Kanigowski.

Oct.2018–Aug.2020 **Master of Science in Mathematics**, *University of Vienna*, Graduated with distinction, Master Thesis: 'Local limit theorems for hitting and return times', Advisor: Roland Zweimüller, Specialisation: Probability Theory and Dynamical Systems.

Oct.2015–Aug.2018 **Bachelor of Science in Mathematics**, *University of Vienna*, Graduated with distinction, Bachelor Thesis: 'Weak convergence of measures', Advisor: Roland Zweimüller.

Employment

Sept.2025–current **Postdoctoral Research Assistant**, *University of Queensland*, Topic: 'Random Dynamical Systems', PI: Cecilia Gonzales–Tokman.

Jul.2025–Aug.2025 **Postdoctoral Research Assistant**, *University of Vienna*, Topic: 'Rare events in Dynamical Systems', PI: Roland Zweimüller.

Jan.2023–May 2025 **Research Assistant**, *University of Maryland, College Park*, Topic: 'Stochastic Properties of Dynamical Systems', PI: Dmitry Dolgopyat.

Aug.2021–Dec.2022 **Teaching Assistant**, *University of Maryland, College Park*, Course: Introduction to Linear Algebra.

Aug.2020–Jul.2021 **Research Assistant**, *University of Vienna*, Topic: 'Rare events in Dynamical Systems', PI: Roland Zweimüller.

Aug.2019–Dec.2019 **Tutor**, *Faculty of Mathematics, University of Vienna*.

Awards

2023 **Spotlight on Graduate Research Martin Monroe Gold Medal**, *University of Maryland, College Park, Department of Mathematics*.

2021 **Prize in recognition of academic achievement**, *Würdigungspreis des Bundesministeriums für Bildung, Wissenschaft und Forschung*, Austria.

Other Qualifications

Languages

English **Fluent**.

German **Native speaker**.

IT and Programming Languages

Working knowledge **Python, Microsoft MS, Matlab**.

Excellent knowledge **LaTeX**.

Recent Publications

2026 **Trimmed strong laws and distributional limits for exponentially mixing systems**, *Max Auer, S. Liu*, arXiv:2601.08126, Under Review at Ergodic Theory and Dynamical Systems.
We study ergodic sums of non-integrable observables for exponentially mixing systems

2025 **Local limit theorems for hitting times and return times of small sets**, *Max Auer, R. Zweimüller*, arXiv:2312.14581, To appear at Israel Journal of Mathematics.
We show a sharper version of the Poisson limit theorem in some deterministic systems

2025 **Trimmed ergodic sums for non-integrable functions with power singularities over irrational rotations**, *Max Auer, T. I. Schindler*, arXiv:2503.22242, Under Review at Ergodic Theory and Dynamical Systems.
We study ergodic sums of non-integrable observables over rotations

2023 **Poisson Limit Theorems for Systems with Product Structure**, *Max Auer*, arXiv:2301.09736, Published at Discrete and Continuous Dynamical Systems.
We develop a method for showing the Poisson limit theorem in some deterministic systems with intermediate behaviour

Selected Talks

2026 **Strong laws and distributional limits for trimmed ergodic sums**, *MATRIX Research Program: Statistical Properties and Extremes in Dynamical Systems Theory and Numerics*, Creswick, Australia.

2024 **Poisson Limit Theorems for Systems with Product Structure**, *Conference: Probabilistic Techniques for Random and Time-Varying Dynamical Systems*, ESI, Vienna, Austria.