

# Max Auer, PhD

## Curriculum Vitae

Tamariskengasse 41/H6, 1220 Vienna

Austria

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✉ mauer96@umd.edu

### Education

- Jan.2021– **Graduate Student, PhD track**, *University of Maryland, College Park, Department of Mathematics*, Advisor: Dmitry Dolgopyat.
- May.2025
- Oct.2018– **Master of Science in Mathematics**, *University of Vienna*, Graduated with distinction(perfect GPA), Master Thesis 'Local limit theorems for hitting and return times', Advisor: Roland Zweimüller, Specialisation: Probability Theory and Dynamical Systems.
- Aug.2020
- Oct.2015– **Bachelor of Science in Mathematics**, *University of Vienna*, Graduated with distinction (perfect GPA), Bachelor thesis 'Weak convergence of measures', Advisor: Roland Zweimüller.
- Aug.2018

### Employment

- Sept.2025– **Postdoctoral Research Assistant at the University of Queensland**, Topic '*Random Dynamical Systems*', PI: Cecilia Gonzales-Tokman.  
current  
Conducted individual research about stochastic limit theorems involving rare events in random systems
- Jul.2025 – **Postdoctoral Research Assistant at the University of Vienna**, Topic '*Rare events in Dynamical Systems*', PI: Roland Zweimüller.  
Aug.2025  
Conducted individual research about stochastic limit theorems involving rare events in deterministic systems
- Jan.2023– **Research assistant at the University of Maryland, College Park**, Topic '*Stochastic Properties of Dynamical Systems*', PI: Dmitry Dolgopyat.  
May 2025  
Conducting research surrounding stochastic properties of deterministic systems
- Aug.2021– **Teaching Assistant at the University of Maryland, College Park**, MATH 240,  
Dec.2022 *Introduction to Linear Algebra*.  
Taught fundamentals of linear algebra to undergraduate students, helped organising exams
- Aug.2020– **Research Assistant at the University of Vienna**, Topic '*Rare events in Dynamical Systems*', PI: Roland Zweimüller.  
Jul.2021  
Conducted individual research about stochastic limit theorems involving rare events in deterministic systems
- Aug.2019– **Tutor**, *Faculty of Mathematics, University of Vienna*.  
Dec.2019 Helped organising, and oversaw, regular problem sessions for beginning university students
- Jul.2017– **Summer internship**, *Bank Austria*.
- Aug.2017

## 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,** *Authors: 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,** *Authors: Max Auer, R. Zweimüller*, arxiv: 2312.14581, To appear at Israel Journal of Mathematics.

We show a sharper version of the PLT in some deterministic systems

- 2025 **Trimmed ergodic sums for non-integrable functions with power singularities over irrational rotations,** *Authors: Max Auer, T. 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,** *Authors: Max Auer*, arxiv: 2301.09736, Published at Discrete and Continuous Dynamical Systems. We develop a method for showing the PLT in some deterministic systems with intermediate behaviour

### Conferences and Presentations

- 2024 **Talk: Poisson Limit Theorems for Systems with Product Structure,** At the conference 'Probabilistic techniques for random and time-varying dynamical systems', ESI, Vienna, Austria.

- 2024 **Talk: Weak mixing for time-change of a linear flow,** At the conference 'Student conference: Dynamical Systems', UMD, College Park, USA.

- 2024 **Talk: Weak mixing and sparse equidistribution,** At the conference 'Dynamics and Number Theory', Jagellonian University, Krakow, Poland.

- 2022 **Poster presentation: Poisson Limit Theorems for Systems with Product Structure**, At the conference '*Probabilistic techniques for random and time-varying dynamical systems*', CIRM, Marseilles, France.