

YUCHEN LIAO 廖羽晨

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🏢 School of Mathematical Sciences 410

🎓 EDUCATION

University of Michigan - Ann Arbor, USA

2015.9 – 2021.6

Ph.D. Applied and Interdisciplinary Mathematics
Advisor: Jinho Baik

University of Science and Technology of China, Hefei, China

2011.9 – 2015.6

B.S. Special class for the gifted young with major in math and applied math

👤 EMPLOYMENT

University of Science and Technology of China

2025.1 – present

Assistant Professor

Mittag-Leffler Institute, Sweden

2024.8 – 2024.12

Junior Fellow

University of Wisconsin - Madison, USA

2023.8 – 2024.12

Van Vleck Visiting Assistant Professor Mentor: Benedek Valko

University of Warwick, UK

2021.8 – 2023.7

Postdoctoral Research Associate Mentor: Nikolaos Zygouras

RESEARCH INTERESTS

Primarily, integrable probability and Kardar-Parisi-Zhang universality. More broadly, probability theory and mathematical physics.

PUBLICATIONS AND PREPRINTS

1. **Multipoint distributions of the KPZ fixed point with compactly supported initial conditions.**
with Z. Liu. arXiv:2509.03246, 2025. Submitted.
2. **Lower tail large deviations of the stochastic six vertex model.**
with S. Das and M. Mucciconi. *Int. Math. Res. Not. IMRN* 2025, no. 18, Paper No. rnaf276, 38 pp.
3. **Large deviations for the q -deformed polynuclear growth.**
with S. Das and M. Mucciconi. *Ann. Probab.* 53(4):1223-1286 (2025).
4. **Moment intermittency in the PAM with asymptotically singular noise.**
with P.Y. Gaureau Lamarre and P. Ghosal. *Trans. Amer. Math. Soc.* 376(10): 7235-7286 (2023).
5. **Non-intersecting path constructions for TASEP with inhomogeneous rates and the KPZ fixed point.**
with E. Bisi, A. Saenz and N. Zygouras. *Comm. Math. Phys.* 402(1): 285-333 (2023).
6. **Rigidity of the stochastic Airy operator.**
with P.Y. Gaureau Lamarre, P. Ghosal and W. Li. *Int. Math. Res. Not.* 2023, No. 24, 20701-20724 (2023).
7. **Multi-point distribution of discrete time periodic TASEP.**
Probab. Theory Relat. Fields 182, No. 3-4, 1053-1131 (2022).
8. **On spatial conditioning of the spectrum of discrete random Schrödinger operators.**
with P.Y. Gaureau Lamarre and P. Ghosal. *J. Spectr. Theory* 12, No. 3, 1109-1153 (2022).
9. **Spectral rigidity of random Schrödinger operators via Feynman-Kac formulas.**
with P.Y. Gaureau Lamarre and P. Ghosal. *Ann. Henri Poincaré* 21, No. 7, 2259-2299 (2020).

CONFERENCE AND INVITED TALKS

- 随机分析研究中心学术交流研讨会, 中国科学院数学与系统科学研究院 July 2025
- 第九届全国概率年会, 中南大学 June 2025
- Webinar on stochastic analysis, 北京理工大学 March 2025
- Random matrices and scaling limits, Mittag-Leffler institute, Nov 2024
- Probability seminar, University of Wisconsin - Madison Oct 2023
- RMT and integrable system seminar, University of Michigan Oct 2023
- 吴文俊数学重点实验室概率统计系列报告, 中国科学技术大学 August 2023
- Stochastic analysis seminar, University of Strasbourg March 2023
- Mathematical physics and probability reading seminar, University of Warwick Oct 2022
- The charm of integrability, University of Bristol Sept 2022
- Mathematical physics and probability reading seminar, University of Warwick Oct 2021
- Universality and Integrability in RMT and Interacting Particle Systems, MSRI Sept 2021
- Junior integrable probability seminar, Columbia University April 2021
- Probability and statistics seminar, University of Kansas Oct 2020
- RMT and integrable systems seminar, University of Michigan Oct 2020
- RMT and integrable systems seminar, University of Michigan Sept 2019

TEACHING

University of Wisconsin - Madison

- Lecturer for Math 331, Introductory probability Spring 2024
- Lecturer for Math 626, Fourier analysis Fall 2023
- Lecturer for Math 320, Linear algebra and differential equations Fall 2023

University of Warwick

- Lecturer for MA4L2/MA6L2, Statistical mechanics Term 2, Academic year 2022-2023

University of Michigan

- Instructor for math 116, Calculus II Fall 2019, Winter 2017
- Instructor for math 115, Calculus I Winter 2018, Fall 2017
- Teaching assistant for math 215, Calculus III Winter 2019
- Teaching assistant for math 623, Computational Finance Fall 2016
- Math Lab instructor Fall 2015, Winter 2016

中国科学技术大学

- 数学分析 B3 助教 2014 秋
- 实分析助教 2015 春