

Yier Lin

✉ ylin10@uchicago.edu

🌐 <http://yierlin.me/>

Education

Ph.D. in mathematics, Columbia University

Sep 2016-Apr 2021

B.S. in mathematics, Tsinghua University

Sep 2012 -Jun 2016

Employments

William H. Kruskal Instructor The University of Chicago

Jan 2022 -

Postdoctoral Researcher Mathematical Sciences Research Institute

Aug 2021-Dec 2021

Research Interest

Probability, stochastic PDE, mathematical physics, interacting particle systems, random matrix theory

Publications/To appear

1. Strong law of large numbers for the stochastic six vertex model
(with Hindy Drillick)
Electronic Journal of Probability (2023), Vol.28, no. 148, 1-21
2. Classification of Stationary distributions for the stochastic vertex models
Electronic Journal of Probability (2023), Vol. 28, no. 122, 1-40
3. Hydrodynamics of the t-PNG model via a colored t-PNG model
(with Hindy Drillick)
Annales de l'Institut Henri Poincaré, Probabilités et Statistiques Accepted
4. KPZ equation with a small noise, deep upper tail and limit shape
(with Pierre Yves Gaudreau Lamarre and Li-Cheng Tsai)
Probability Theory and Related Fields (2023), Vol 185, no. 3-4, 885-920
5. Lyapunov exponents of the SHE for general initial data
(with Promit Ghosal)
Annales de l'Institut Henri Poincaré, Probabilités et Statistiques (2023), Vol 59, no. 1, 476-502
6. Lyapunov exponents of the half-line SHE
Journal of Statistical Physics (2021), Vol 183, 1-34
7. Short time large deviations of the KPZ equation
(with Li-Cheng Tsai)
Communications in Mathematical Physics (2021), Vol 386, 359-393
8. The stochastic telegraph equation limit of the stochastic higher spin six vertex model
Electronic Journal of Probability (2020), Vol 25, no. 148, 1-30
9. KPZ equation limit of stochastic higher spin six vertex model
Mathematical Physics, Analysis and Geometry (2020), Vol 23, no. 1, 1-118
10. Markov duality for stochastic six vertex model
Electronic Communications in Probability (2019), Vol 24, no. 67, 1-17
11. Second order behavior of the block counting process of beta coalescents
(with Bastien Mallein)
Electronic Communications in Probability (2017), Vol 22, no. 61, 1-8

Preprints

1. Exact Multi-Point Correlations in the Stochastic Heat Equation for Strictly Sublinear Coordinates
(with Pierre Yves Gaudreau Lamarre)
arXiv:2403.06868
2. Multi-point Lyapunov exponents of the Stochastic Heat Equation *arXiv:2305.19966*

3. Spacetime limit shapes of the KPZ equation in the upper tails *arXiv:2304.14380*
(with Li-Cheng Tsai)
4. A lower-tail limit in the weak noise theory *arXiv:2210.05629*
(with Li-Cheng Tsai)
5. Long and short time laws of iterated logarithms for the KPZ fixed point *arXiv:2207.04162*
(with Sayan Das and Promit Ghosal)

Teaching Experience

University of Chicago (Instructor)

STAT 23400: Statistical Models and Methods (Spring 2022, 2023, 2024)

STAT 38520: Topics in Random Matrix Theory (Spring 2024)

STAT 36510: Topics on Random Growth Model (Winter 2022, 2023)

Columbia University (Instructor)

MATHUN 1102: Calculus II (Spring 2021)

MATHUN 1003: College Algebra-Analytic Geometry (Spring 2020)

Service

Journal Referee

• Annals of Probability • Annales de l'Institut Henri Poincaré, Probabilités et Statistiques • Communications in Mathematical Physics • Electronic Communication in Probability • Electronic Journal of Probability • Journal of Functional Analysis • Journal of Statistical Physics • Probability Theory and Related Fields • Transactions of the AMS.

Outreach

- Lecturer for Mathematics REU at the University of Chicago
- Mentor 8 students through direct reading program
- Table leader for Julia Robinson Math Festival for high school students in Chicago area
- Math circle lecturer: Chicago, San Jose, Cupertino
- Coach at Columbia Undergraduate Mathematical Modelling Workshop

Invited Talks

1. Probability Seminar
University of Maryland (November 2023)
2. Probability Seminar
University of California, San Diego (November 2023)
3. Center for Financial Mathematics and Actuarial Research Seminar
University of California, Santa Barbara (October 2023)
4. Probability and Statistics Seminar
University of Southern California (October 2023)
5. Probability Seminar
University of California, Los Angeles (October 2023)
6. Probability Seminar
Northwestern University (October 2023)
7. Probability Seminar
Temple University and University of Pennsylvania (September 2023)
8. Probability Seminar
University of Wisconsin–Madison (September 2023)
9. Probability Seminar
Massachusetts Institute of Technology (September 2023)

10. Workshop on Stochastic Analysis, Random Fields, and Applications
Michigan State University (August 2023)
11. Frontiers in Stochastic Analysis
University of Illinois Chicago (August 2023)
12. Probability and Statistical Physics Seminar
University of Chicago (March 2023)
13. Probability Seminar
University of Cincinnati (February 2023)
14. Analysis and Applied Mathematics Seminar
University of Illinois Chicago (February 2023)
15. Probability Seminar
Michigan State University (February 2023)
16. Probability Seminar
Columbia University (January 2023)
17. Workshop on Stochastic PDE and Related Topics
University of Maryland (November 2022)
18. Random Matrix Theory Seminar
KTH Royal Institute of Technology (November 2022)
19. Analysis Seminar
Oregon State University (October 2022)
20. AMS Spring Central Sectional Meeting
Purdue University (March 2022)
21. Stochastics Seminar
University of Utah (March 2022)
22. Probability Webinar
Tsinghua University, Peking University and Beijing Normal University (March 2022)
23. 5th Colloquium on Interacting Particle Systems
Instituto Superior Técnico (January 2022)
24. Minicourse on interacting particle systems and stochastic PDEs
Mathematical Science Research Institute (November 2021)
25. Conference on Algebraic duality methods in probability
Texas A&M University (June 2021)
26. Probability and Statistics Seminar
University of Kansas (March 2021)
27. Stochastic Seminar
University of Utah and University of Arizona (November 2020)
28. SPDE seminar
Columbia University (November 2020)
29. Integrable probability seminar
Massachusetts Institute of Technology (October 2020)
30. Probability seminar
Purdue University (September 2020)
31. Junior integrable probability seminar
Online (August 2020)
32. Integrable Probability Seminar
Columbia University (October 2019)
33. Integrable Probability Summer School
University of Virginia (May 2019)