

Xinyi Li

Assistant Professor

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Personal Information

Born on: 24, August, 1988
Place of Birth: Chengdu, China
Citizenship: Chinese

Research Interests: Probability theory, statistical physics, random geometry.

Education and Work

- 2019 - **Assistant Professor**, BICMR, Peking University, Beijing, China.
- 2016 - 2019 **L. E. Dickson instructor**, Department of Mathematics, the University of Chicago.
- 2012 - 2016 **Dr. sc. ETH Zurich**, Department of Mathematics, ETH Zurich, Switzerland,
under supervision of **Prof. Alain-Sol Sznitman**. Title of thesis:
On large deviations and disconnection for random walk and random interlacements.
- 2011 - 2012 **M. Sc. in Mathematics**, Paris Dauphine University, France, as laureate of
Paris Graduate School of Mathematical Sciences.
- 2007 - 2011 **B. Sc. in Mathematics**, Peking University, Beijing, China.

Works

- X. Li and A.-S. Sznitman. A lower bound for disconnection by random interlacements.
Electronic Journal of Probability, **19**(17):1-26 (2014).
- X. Li and A.-S. Sznitman. Large deviations for occupation time profiles of random interlacements.
Probability Theory and Related Fields, **161**(1-2):309-350 (2015).
- X. Li. A lower bound for disconnection by simple random walk. *Ann. Probab.*, **45**(2):879-931, 2017.
- X. Li. Percolative properties of Brownian interlacements and its vacant set.
J. Theor. Probab., **33**:1855-1893 (2019).
- M. Hilario, X. Li and P. Panov. Shape theorem and surface fluctuation for Poisson cylinders.
Preprint. Electron. J. Probab., **24**(68):1-16 (2019).
- X. Li and D. Shiraishi. One-point function estimates for loop-erased random walk in three
dimensions. *Electron. J. Probab.*, **24**(111):1-46 (2019).
- N. Holden, G. Lawler, X. Li and X. Sun. Minkowski content of Brownian cut points.
To appear in *Ann. Inst. Henri Poincaré, Probab. Stat.*

N. Holden, X. Li and X. Sun. Natural parametrization of percolation interface and pivotal points. To appear in *Ann. Inst. Henri Poincaré, Probab. Stat.*

X. Li and D. Shiraishi. Natural parametrization for the scaling limit of loop-erased random walk in three dimensions. *Preprint*, submitted.

H. Hernandez-Torres, X. Li and D. Shiraishi. Minkowski content for the scaling limit of loop-erased random walk in three dimensions. *In preparation*.

X. Li and Z. Zhuang. Entropic repulsion for the intersection of two independent random interacements. *In preparation*.

Grants

- **Principal Investigator**, Start-up Grant of Peking University: CNY 400,000.
- **Principal Investigator**, National Science Foundation of China, Grant No. 12071012: CNY 510,000.
- **Participant**, National Key Research & Development Program of China No. 2020YFA0712900: CNY 4,400,000.

Selected Talks

12/2013	Probability Seminar, Peking University.
06/2014	School and Workshop on Random Interacting Systems, University of Bath.
07/2015	Peking University Youth Probability Forum, Peking University.
11/2015	Oberseminar Stochastik, University of Cologne.
11/2015	Institute for Applied Mathematics, University of Bonn.
11/2015	Max Planck Institute for Mathematics in the Sciences, Leipzig.
11/2015	Oberseminar “Stochastic processes in physics and biology”, TU Berlin.
12/2015	Winter meeting of Canadian Mathematical Society, Montreal, Canada.
11/2016	Probability and Statistical Physics Seminar, The University of Chicago.
11/2016	Probability Seminar, Northwestern University.
02/2017	Courant Institute Probability and Mathematical Physics Seminar, New York University.
04/2017	Probability Seminar, UCLA.
09/2017	Probability Seminar, NYU Shanghai.
09/2017	Probability Seminar, Peking University.
12/2017	Probability Seminar, NYU Shanghai.
12/2017	Kansai Probability Seminar, Kyoto University.
02/2018	Probability Seminar, Stanford University.
03/2018	Discrete Mathematics and Statistical Mechanics Seminar, University of Connecticut.
04/2018	Probability Seminar, Michigan State University.
04/2018	Probability Seminar, UCLA.
05/2018	Probability Seminar, Texas A & M University.
08/2018	Random Walks in Correlated and Dynamic Environments, Texas A & M University.
10/2018	Statistics Seminar, University of Illinois at Chicago.
10/2018	Probability Seminar, McGill University.
11/2018	Probability Seminar, University of Illinois at Urbana-Champaign.
01/2019	Penn/ Temple Probability Seminar, University of Pennsylvania.

02/2019 Probability Seminar, Purdue University.
04/2019 Colloquium, University of Colorado, Colorado Springs.
04/2019 Columbia Probability Seminar, Columbia University.
07/2019 Seasonal Institute of Mathematical Society of Japan.
11/2019 Annual meeting of the Chinese Mathematical Society.
12/2019 Probability Symposium, Keio University.
01/2020 Mini-course, National University of Singapore.
12/2020 East China Normal University.
04/2021 Colloquium, Tsinghua University

Academic Visits

09/2017, 12/2017, 07/2020 NYU Shanghai.
12/2017, 06-07/2018, 07/2019 Kyoto University.

Supervision of students

- **Supervision** of Ph.D. students Yu Liu and Aoteng Xia (1st year).
- **Co-supervision** (joint with Fuxi Zhang) of Ph.D student Yifan Gao (4th year).
- **Co-supervision** (jointly with A.-S. Sznitman and D. Belius) of the Master thesis of Philippe Deprez (Title: *A shape theorem for the internal distance on the interlacement set*, 2013).

Community Contributions

- Co-organizer of THU-PKU-BNU joint probability webinar.
- Referee for the following journals: *Annals of Probability*, *Communications in Mathematical Physics* and *Stochastic Processes and their Applications*.
- Reviewer of Mathematical Reviews of the American Mathematical Society.

Languages

Chinese: native.

English: fluent (written and spoken).

French: intermediate (spoken) to fluent (written).

German: intermediate (written and spoken).

Japanese: intermediate (written).

Latin: intermediate (written).