Linjie Zhao*

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Work

- 09/2022 - present   Assistant professor, School of Mathematics and Statistics, Huazhong University of Science and Technology, Wuhan, China.

- 09/2024 - 11/2024   Visiting Marielle Simon, Lyon University I, France.

- 09/2020 - 09/2022   Post-doctor, INRIA Lille Nord Europe, Lille, France. Advisor: Marielle Simon and Clément Erignoux.

- 09/2020 - 12/2020   Visiting Zhong-gen Su, Zhejiang University, Hangzhou, China.

Education

- 09/2015 - 01/2020   Doctor of Natural Science, Peking University, Beijing, China. Advisor: Da-yue Chen.

- 09/2011 - 06/2015   Bachelor of Science in Mathematics, Nankai University, Tianjin, China.

Research Interest

Interacting Particle Systems; Hydrodynamic Limits; Large and Moderate Deviations.

Teaching

- Spring 2025, *Probability and Mathematical Statistics*, Huazhong University of Science and Technology.

- Spring 2024, *Probability and Mathematical Statistics*, Huazhong University of Science and Technology.

- Autumn 2023, *Probability and Mathematical Statistics*, Huazhong University of Science and Technology.

- Autumn 2022, *Calculus*, Huazhong University of Science and Technology.

- Autumn 2018, Teaching assistant, *Introduction to Stochastic Processes* under Daquan Jiang, Peking University, China.

- Spring 2018, Teaching assistant, *Stochastic Processes* under Dayue Chen, Peking University, China.

- Autumn 2017, Teaching assistant, *Advanced Probability Theory* under Yanxia Ren, Peking University, China

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*August 22, 2025

- Autumn 2016, Teaching assistant, *Advanced Probability Theory* under Yanxia Ren, Peking University, China.

Publications

(1) Linjie Zhao (2025). Moderate deviation principles for the WASEP, *Journal of Statistical Physics*, **192** (85), 1-34.

(2) Linjie Zhao (2025). Stationary fluctuations for a multi-species zero range process with long jumps, *Stochastic Processes and their Applications* **186**, 104645.

(3) Clément Erignoux and Linjie Zhao, (2024). Stationary fluctuations for the facilitated exclusion process. *Electronic Journal of Probability*, **29** (152), 1-41.

(4) Lu Xu and Linjie Zhao (2024). Hydrodynamics for asymmetric simple exclusion on a finite segment with Glauber-type source. *Journal of Statistical Physics*, **191** (78).

(5) Clément Erignoux, Marielle Simon and Linjie Zhao, (2024). Mapping hydrodynamics for the facilitated exclusion and zero-range processes. *Annals of Applied Probability,* **34** (1B), 1524-1570.

(6) Xiaofeng Xue and Linjie Zhao (2024). Sample path MDP for the current and the tagged particle in the SSEP. *Electronic Journal of Probability*, **29** (91), 1-39.

(7) Xiaofeng Xue and Linjie Zhao, (2024). Moderate deviations for the current and tagged particle in symmetric simple exclusion processes. *Stochastic Processes and their Applications*, **167**, 104218.

(8) Linjie Zhao, (2024). The motion of the tagged particle in the asymmetric exclusion process with long jumps. *Bernoulli*, **30** (3), 2399 - 2422.

(9) Xiaofeng Xue and Linjie Zhao (2024). The voter model with a slow membrane. *Journal of Theoretical Probability*, 1 - 43.

(10) Linjie Zhao, (2024). Equilibrium perturbations for asymmetric zero range process under diffusive scaling in dimensions $d \geq 2$. *Frontiers of Mathematics*, **19** (5).

(11) Clément Erignoux, Marielle Simon and Linjie Zhao, (2023). Asymmetric attractive zero-range processes with particle destruction at the origin. *Stochastic Processes and their Applications*, **159**, 1-33.

(12) Lu Xu and Linjie Zhao, (2023). Equilibrium perturbations for stochastic interacting systems. *Electronic Journal of Probability*, **28**(6), 1-30.

(13) Linjie Zhao, (2022). Long-time behavior of SSEP with slow boundary. *Statistics and Probability Letters*, 109452.

(14) Xiaofeng Xue and Linjie Zhao, (2021). Non-equilibrium fluctuations of the weakly asymmetric normalized binary contact path process. *Stochastic Processes and their Applications*, **135**, 227-253.

(15) Xiaofeng Xue and Linjie Zhao, (2021). Moderate deviations for the SSEP with a slow bond. *Journal of Statistical Physics*, **182** (48).

(16) Xiaofeng Xue and Linjie Zhao, (2020). Hydrodynamics of the weakly asymmetric normalized binary contact path process. *Stochastic Processes and their Applications*, **130**, 6757-6782.

(17) Dayue Chen and Linjie Zhao, (2019). The invariant measures and the limiting behaviors of the facilitated TASEP. *Statistics and Probability Letters*, 108557.

Honors

- 2019 - 2020 Principle's scholarship and Schlumberger Scholarship of Peking University.

- 2018 - 2019 Merit Student of Peking University.

- 2017 - 2018 Merit Student of Peking University.

- 2016 - 2017 DTZ Scholarship and Merit Student of Peking University.

Invited Talks

- 12/06/2025 - 16/06/2025 The one dimensional facilitated exclusion process. *The Ninth Annual National Conference on Probability Theory*, Central South University, Changsha, China.

- 05/01/2025 - 10/01/2025 Moderate deviation principles for a reaction diffusion model in non-equilibrium. *Conference on Probability and Statistical Physics*, TSIMF, Sanya, China.

- 15/12/2024 - 20/12/2024 Moderate deviation principles for a reaction diffusion model in non-equilibrium. *Workshop on Probability and Mathematical Physics*, Gimhae, Korea.

- 06/2024 Moderate deviation principles for the tagged particle in the simple exclusion process. *Probability Seminar*, Ningbo University of Technology, China .

- 25/04/2024 Equilibrium perturbations for stochastic interacting systems. *Analysis, PDE & Probability Seminar*, KIAS, Korea, online.

- 21/03/2024 - 27/03/2024 Moderate deviations for the tagged particle in simple exclusion process. *Workshop on Interacting Particle Systems and Stochastic Analysis,* BIMSA, Beijing, China.

- 01/2024 Hydrodynamic limits and stationary fluctuations for the facilitated exclusion process. *Probability Seminar*, Wuhan University, China.

- 10/2023 Stationary fluctuations for the facilitated exclusion process and beyond. *Probability Seminar*, Beijing Normal University, China.

- 10/2023 Stationary fluctuations for the facilitated exclusion process. *Probability Seminar*, Tsinghua University, China.

- 08/2023 Stationary fluctuations from hydrodynamic limits for interacting particle systems with several conservation laws. *The Eighth Annual National Conference on Probability Theory*, Fujian Normal University, China.

- 04/2023 Hydrodynamic limits for the facilitated exclusion Process. *The twelfth Annual National Conference on Probability and Statistics.* Shandong University, China.

- 03/2023 Tagged particle in asymmetric exclusion process with long jumps. *SPMES*. Regular online seminar on probability and statistical physics.

- 06/2022 Hydrodynamic limit for the facilitated exclusion process. *Probability seminar* by THU-PEK-BNU. Online.

- 03/2022 Mapping Hydrodynamics for the Facilitated Exclusion and Zero-range Processes. *Probability seminar*, Dijon, France.

- 10/2021 Asymmetric attractive zero-range processes with particle destruction at the origin. *Probability seminar*, Shanghai Jiao Tong University, China. Online.

- 04/2021 Introduction to the hydrodynamic limit of interacting particle systems. *Probability seminar*, Beijing Jiaotong University, China. Online.

- 01/2021 Asymmetric attractive zero-range processes with particle destruction at the origin. *The 5th Colloquium on Interacting Particle Systems*, Técnico, Lisbon. Online.

- 09/2019 Co-organized *Welcoming Probability Seminar for New Postgraduates*. The Department of Mathematics, Peking University, China. With Yingxin Mu and Jianjie Zhao.

- 08/2019 Scaling limits for the SSEP with a slow site. Poster. *Stochastic Analysis, Random Fields and Integrable Probability*, Kyushu University, Fukuoka Japan.

- 06/2019 Hydrodynamics of the normalized binary contact path process. *The 23rd Beijing-Tianjin-Hebei Youth Probability and Statistic Seminar*, University of International Business and Economics, Beijing, China.

- 11/2018 The invariant measures and the limiting behaviors of the facilitated TASEP. *Shanghai-Hangzhou Probability Seminar*, Zhejiang University, Hangzhou, China.

- 10/2018 The invariant measures and the limiting behaviors of the facilitated TASEP. *The National Youth Probability and Statistic Conference*, Jiangsu Normal University, Xuzhou, China.