

Linjie ZHAO

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Work Experience

- 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. Supported by the grant: FEDER Tremplin ERC. 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.

Publications

- (1) Linjie Zhao (2026). Moderate deviation principles for a reaction diffusion model in non-equilibrium, *Bernoulli*, **32** (2), 1098-1121.
- (2) Wenxuan Chen and Linjie Zhao (2026). Stationary fluctuations for the WASEP with long jumps and infinitely extended reservoirs, *Stochastic Processes and their Applications*, **192**, 104827.
- (3) Linjie Zhao (2025). Moderate deviation principles for the WASEP, *Journal of Statistical Physics*, **192** (85), 1-34.
- (4) Linjie Zhao (2025). Stationary fluctuations for a multi-species zero range process with long jumps, *Stochastic Processes and their Applications* **186**, 104645.
- (5) Clément Erignoux and Linjie Zhao (2024). Stationary fluctuations for the facilitated exclusion process, *Electronic Journal of Probability*, **29** (152), 1-41.
- (6) 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).
- (7) 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.

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- (8) 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.
- (9) 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.
- (10) Linjie Zhao (2024). The motion of the tagged particle in the asymmetric exclusion process with long jumps, *Bernoulli*, **30** (3), 2399 - 2422.
- (11) Xiaofeng Xue and Linjie Zhao (2024). The voter model with a slow membrane, *Journal of Theoretical Probability*, 1 - 43.
- (12) Linjie Zhao (2024). Equilibrium perturbations for asymmetric zero range process under diffusive scaling in dimensions $d \geq 2$, *Frontiers of Mathematics*, **19** (5).
- (13) 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.
- (14) Lu Xu and Linjie Zhao (2023). Equilibrium perturbations for stochastic interacting systems, *Electronic Journal of Probability*, **28**(6), 1-30.
- (15) Linjie Zhao (2022). Long-time behavior of SSEP with slow boundary, *Statistics and Probability Letters*, 109452.
- (16) 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.
- (17) Xiaofeng Xue and Linjie Zhao (2021). Moderate deviations for the SSEP with a slow bond, *Journal of Statistical Physics*, **182** (48).
- (18) Xiaofeng Xue and Linjie Zhao (2020). Hydrodynamics of the weakly asymmetric normalized binary contact path process, *Stochastic Processes and their Applications*, **130**, 6757-6782.
- (19) Dayue Chen and Linjie Zhao (2019). The invariant measures and the limiting behaviors of the facilitated TASEP, *Statistics and Probability Letters*, 108557.

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

Grants

- 01/2025 - 12/2027 Youth program of National Natural Science Foundation of China. No. 12401168. Principal investigator.
- 01/2024 - 12/2027 General program of National Natural Science Foundation of China. No. 12371142. Participate.
- 01/2020 - 12/2023 General program of National Natural Science Foundation of China. No. 11971038. Participate.

Referee Work

Annales de l'IHP; Annals of Probability; Electronic Journal of Probability; Stochastic Processes and Applications.

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

- 2025/10/27 - 2025/10/31 Moderate deviations for the occupation time of the SEP with long jumps. *The 23rd Symposium Stochastic Analysis on Large Scale Interacting Systems*, Tokyo University, Japan.
- 2025/6/12 - 2025/6/16 The one dimensional facilitated exclusion process. *The Ninth Annual National Conference on Probability Theory*, Central South University, Changsha, China.
- 2025/1/5 - 2025/1/10 Moderate deviation principles for a reaction diffusion model in non-equilibrium. *Conference on Probability and Statistical Physics*, TSIMF, Sanya, China.
- 2024/12/15 - 2024/12/20 Moderate deviation principles for a reaction diffusion model in non-equilibrium. *Workshop on Probability and Mathematical Physics*, Gimhae, Korea.
- 2024/6 Moderate deviation principles for the tagged particle in the simple exclusion process. *Probability Seminar*, Ningbo University of Technology, China .
- 2024/4 Equilibrium perturbations for stochastic interacting systems. *Analysis, PDE & Probability Seminar*, KIAS, Korea, online.
- 2024/3/21 - 2024/3/27 Moderate deviations for the tagged particle in simple exclusion process. *Workshop on Interacting Particle Systems and Stochastic Analysis*, BIMSA, Beijing, China.
- 2024/1 Hydrodynamic limits and stationary fluctuations for the facilitated exclusion process. *Probability Seminar*, Wuhan University, China.
- 2023/10 Stationary fluctuations for the facilitated exclusion process and beyond. *Probability Seminar*, Beijing Normal University, China.
- 2023/10 Stationary fluctuations for the facilitated exclusion process. *Probability Seminar*, Tsinghua University, China.

- 2023/8 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.
- 2023/4 Hydrodynamic limits for the facilitated exclusion Process. *The twelfth Annual National Conference on Probability and Statistics*. Shandong University, China.
- 2023/3 Tagged particle in asymmetric exclusion process with long jumps. *SPMES*. Regular online seminar on probability and statistical physics.
- 2022/6 Hydrodynamic limit for the facilitated exclusion process. *Probability seminar* by THU-PEK-BNU. Online.
- 2022/3 Mapping Hydrodynamics for the Facilitated Exclusion and Zero-range Processes. *Probability seminar*, Dijon, France.
- 2021/10 Asymmetric attractive zero-range processes with particle destruction at the origin. *Probability seminar*, Shanghai Jiao Tong University, China. Online.
- 2021/4 Introduction to the hydrodynamic limit of interacting particle systems. *Probability seminar*, Beijing Jiaotong University, China. Online.
- 2021/1 Asymmetric attractive zero-range processes with particle destruction at the origin. *The 5th Colloquium on Interacting Particle Systems*, Técnico, Lisbon. Online.
- 2019/9 Co-organized *Welcoming Probability Seminar for New Postgraduates*. The Department of Mathematics, Peking University, China. With Yingxin Mu and Jianjie Zhao.
- 2019/8 Scaling limits for the SSEP with a slow site. Poster. *Stochastic Analysis, Random Fields and Integrable Probability*, Kyushu University, Fukuoka Japan.
- 2019/6 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.
- 2018/11 The invariant measures and the limiting behaviors of the facilitated TASEP. *Shanghai-Hangzhou Probability Seminar*, Zhejiang University, Hangzhou, China.
- 2018/10 The invariant measures and the limiting behaviors of the facilitated TASEP. *The National Youth Probability and Statistic Conference*, Jiangsu Normal University, Xuzhou, China.