Yilin YE

Email:
yilin.ye@polytechnique.edu

Phone:
+33 7 86 45 67 56

Address:
Route de Saclay, 91128 Palaiseau

Education

École Polytechnique (X) - Institut Polytechnique de Paris (IP Paris) — Palaiseau, France
Laboratoire de Physique de la Matière Condensée (PMC, UMR 7643), CNRS — Oct. 2023 - Sept. 2026
Doctoral student, Statistical Physics. Supervisor: Denis S. GREBENKOV

École Normale Supérieure (ENS) - Université Paris Sciences et Lettres (PSL) — Paris, France
Master 2 (M2), Physics, ICFP (Soft matter & Biophysics). Mention: Bien (Good). — Sept. 2022 - Jun. 2023
Master 1 (M1), Chemistry. — Sept. 2021 - Jun. 2022
Diplôme de l'ENS (DENS), Major/Minor: Physics/Chemistry. — Sept. 2019 - Jun. 2023

Xiamen University — Xiamen, China
Bachelor, Chemistry. Honor: Outstanding Graduate. — Sept. 2015 - Jun. 2019

Publications

8. **Ye, Y.**; Grebenkov, D. S. (2025) Local persistence exponent and its log-periodic oscillations in self-similar boundaries. *Phys. A: Stat. Mech. Appl.*, submitted. (arxiv: 2507.08628)
7. **Ye, Y.**; Amarouchene, Y.; Sarfati, R.; Dean, D. S.; Salez, T. (2025) Brownian motion near a soft surface. *Comptes Rendus Physique*, revised. (hal-05143181, arxiv: 2507.03403)
6. **Ye, Y.**; Grebenkov, D. S. (2025) Boundary local time on wedges and prefractal curves. *J. Phys. A: Math. Theor.*, **58**, 345002.
5. Maïda, M.; Fahmy, A.; Fatras, J.-L.; **Ye, Y.** (2025) Large deviations in Coulomb gases: a mathematical perspective. *SciPost Phys. Lect. Notes*, In refereeing.
4. **Ye, Y.**; Chaigneau, A.; Grebenkov, D. S. (2025) Escape-from-a-layer approach for simulating the boundary local time in Euclidean domains. *J. Comput. Phys.*, **537**, 114099.
3. **Ye, Y.**; Chaigneau, A.; Grebenkov, D. S. (2025) First-passage times to a fractal boundary: local persistence exponent and its log-periodic oscillations. *Phys. Rev. E*, **111**, 014153. (Editors' Suggestion)
2. Zhang, F.; Niu, Y.; Hong, D.; **Ye, Y.**; Hua, Y.; Ding, S.; Zhang, Y. (2021) *Chinese Chemical Letters*, 32(2), 668-671.
1. Li, J.; **Ye, Y.**; Zhang, Y. (2018) *Organic Chemistry Frontiers*, 5(5), 864-892.

Researches

Probabilistic Approach to Diffusion-Mediated Surface Phenomena (M2, PhD thesis) — Palaiseau, France
Supervisor | Denis S. GREBENKOV, PMC (UMR 7643), CNRS, École Polytechnique — Apr. 2023 - Present
> Statistics of the first-passage time (FPT) to fractal boundaries (Koch snowflakes); [3,8]
> Efficient numerical approach to simulate the boundary local time on smooth or polygonal domains; [4,6]
> Time-dependent reactivity in diffusion-controlled reactions;

Brownian Motion near a Soft Surface (M1) — Talence, France
Supervisor | Thomas SALEZ, LOMA (UMR 5798), CNRS, Université de Bordeaux — Feb. - Jul. 2022
> Theoretical and numerical analyses of non-linear coupled equations for cylindrical particle's movement; [7]

Study of $\eta^{(\prime)} \to \pi^+\pi^-\gamma^{(*)}$ Decays by Effective Field Theory — Changsha, China
Supervisor | Lingyun DAI, Hunan University — Mar. - Aug. 2021

Simulation of Vibrational ICD on Model Systems with Reduced Dimensions (DENS) — *Remote*
Supervisor | Jérémie CAILLAT, LCPMR (UMR 7614), CNRS, Sorbonne Université — Jun. - Jul. 2020

Research towards Total Synthesis of Atkamine (Undergraduate thesis) [2] Xiamen, China
Supervisor | Yandong ZHANG, Xiamen University Jan. 2018 - May 2019
Research towards Total Synthesis of Phainanoid A (Summer research) Chicago, USA
Supervisor | Guangbin DONG, University of Chicago Jul. - Sept. 2018
Research towards Total Synthesis of (–)-Actinophyllic Acid [1] Xiamen, China
Supervisor | Yandong ZHANG, Xiamen University Jul. 2016 - Jan. 2018

Conferences

National Conference on Statistical Physics and Complex System (NCSP, 8th) Ningbo, China.
Poster: FPT to a fractal boundary: local persistence exponent and its log-periodic oscillations Jul. 30-Aug. 1, 2025
International Conference on Statistical Physics (29th) Florence, Italy.
Poster: FPT to a fractal boundary: local persistence exponent and its log-periodic oscillations Jul. 13-18, 2025
Statistical Aspects of Nonlinear Physics (IHES Summer School) Bures-sur-Yvette, France.
Oral: FPT to a fractal boundary: local persistence exponent and its log-periodic oscillations Jun. 23-Jul. 4, 2025
School on Non-Equilibrium Statistical Physics Barcelona, Spain.
Apr. 7-11, 2025
Journées de Physique Statistique (44th) Paris, France.
Oral: FPT to a fractal boundary: local persistence exponent and its log-periodic oscillations Jan. 30-31, 2025
Conference of Condensed Matter Physics (CCMP) Liyang, China.
Poster: EFL approach for simulating the boundary local time in Euclidean domains Aug. 4-9, 2024
Theory of Large Deviations and Applications (Summer school) [5] Les Houches, France.
Poster: EFL approach for simulating the boundary local time in Euclidean domains Jul. 1-26, 2024
Journées de Physique Statistique (43th) Paris, France.
Oral: Encounter-based approach for diffusion-mediated surface phenomena Jan. 25-26, 2024
Journées de Physique Statistique (42th) Paris, France.
Oral: Brownian motion near a soft surface Jan. 26-27, 2023
Journées de la Matière Condensée (18th) Lyon, France.
Oral: Brownian motion near a soft surface (MC24: Simulation des colloïdes) Aug. 22-26, 2022

Selected Awards

Best Poster (20 in 111), NCSP Aug. 2025
Best Poster (10 in 199), CCMP Aug. 2024
Normalien Scholarship, ENS (International Selection) Sept. 2019
China National Scholarship ($\times$3) Nov. 2016, Nov. 2017, Nov. 2018
Wenqing Scholarship (18 in 14181), Xiamen University Apr. 2018

Languages

Chinese (Native), English (C1), French (B2) C, Fortran, LaTeX, Mathematica, Matlab, Pascal, Python, R