BRUNE MASSOULIÉ

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EDUCATION

PhD student – Université Paris Dauphine - PSL   *2023 - 2026*
Under the supervision of Cristina Toninelli and Clément Erignoux. The defence will be in June 2026.

M2 Mathématiques de l'aléatoire – Institut Polytechnique de Paris   *2022 - 2023*
Masters degree in Probability and Statistics.

Diplôme d'ingénieur de l'Ecole polytechnique – Ecole polytechnique   *2019 - 2023*
Masters in Engineering and Science. Specialisation in Applied Mathematics.

Classe préparatoire scientifique – Lycée Hoche, Versailles   *2017 - 2019*
Intense preparation for the French Grandes Ecoles *competitive exams; mathematics, physics and computer science.*

Baccalaureate (Option Internationale du Baccalauréat, British version)   *2017*
with high honours

PUBLICATIONS AND PRE-PUBLICATIONS

B. Massoulié, C. Erignoux, C. Toninelli, W. Krauth, 2025. *Velocity Trapping in the Lifted Totally Asymmetric Simple Exclusion Process and the True Self-Avoiding Random Walk*. Phys. Rev. Lett. 135, 127102.

B. Massoulié, 2024. *Cutoff for the mixing time of the Facilitated Exclusion Process*. Preprint, arXiv:2412.04032, submitted.

C. Erignoux, B. Massoulié, 2024. *Cutoff for the transience and mixing time of a SSEP with traps and consequences on the FEP*. Preprint, arXiv:2403.20010, accepted in Annales de l'Institut Henri Poincaré.

Q. Berger, B. Massoulié, 2024. *Wetting on a wall and wetting in a well: Overview of equilibrium properties*. Stochastic Processes and their Applications 170, 104299.

P. Carlotti, B. Massoulié, A. Morez, A. Villaret, L. Jing, T. Vrignaud, A. Pfister, 2022. *Respiratory pandemic and indoor aeraulics of classrooms*. Building and Environment 212, 108756.

TALKS

Les Probabilités de Demain, Paris	*Feb. 2026*
Seminar of MODAL'X, Nanterre	*Jan. 2026*
Matinée du CEREMADE, Paris	*Jan. 2026*
Oberseminar in Stochastics, Bonn	*Jan. 2026*
Stochastic Calculus seminar of IRMA, Strasbourg	*Nov. 2025*
Modelling and Probability seminar of LPSM, Paris	*Oct. 2025*
Large scale stochastic dynamics, Oberwolfach	*Sep. 2025*
53rd Probability Summer School, Saint Flour	*Jul. 2025*
Probability seminar of IRMAR, Rennes	*May 2025*
Joint Probability seminar of ICJ/UMPA, Lyon	*May 2025*
Recent developments on mixing times, Simons Center for Geometry and Physics, Stony Brook	*Mar. 2025*
SuPerGRandMa seminar, Orsay	*Nov. 2024*
Probability seminar of LAGA, Paris	*Nov. 2024*
Rencontres de Probabilités, Rouen	*Sep. 2024*
Mixing Times Workshop with Applications to Theoretical Computer Sciences, Bath	*Sep. 2024*
52nd Probability Summer School, Saint Flour	*Jul. 2024*
University of Warwick Probability seminar, Coventry	*May 2024*
Young Researchers' Seminar of the CEREMADE, Paris	*Oct. 2023*

POSTERS

Particle Systems and PDEs XIII, Modena	*Dec. 2025*
Mixing Times between Probability, Computer Science and Statistical Physics, Trieste	*May 2025*
Particle Systems and PDEs XII, Trieste	*Sep. 2024*
French Japanese Conference on Probability & Interactions, IHES, Bures-sur-Yvette	*Mar. 2024*

TEACHING

Teaching assistant – Summer School on Local Limits of Random Graphs, Université Paris-Saclay	*Jun. 2025*
Tutorials – Poisson Processes, M1, Université Paris Dauphine - PSL	*2024 - 2026*
Tutorials – Probabilités 2, L2, Université Paris Dauphine - PSL	*2023 - 2024*
Tutorials – Modèles déterministes et probabilités finies, L1, Université Paris Dauphine - PSL	*2023 - 2024*
Mathematics examiner in Classes Préparatoires, MP2I and MP*, Lycée Hoche, Versailles	*2022 - 2023*

WORK EXPERIENCE

INRIA, Laboratoire Paul Painlevé, Villeneuve d'Ascq *Apr. 2023 - Aug. 2023*
Research internship supervised by Clément Erignoux
Study of the transience time of the Facilitated Exclusion Process (FEP)

Laboratoire de probabilités, statistique et modélisation, Paris *Apr. 2022 - Aug. 2022*
Research internship supervised by Quentin Berger – Rewarded with the "Félicitations" of Ecole polytechnique
Generalisation of a polymer wetting model, study of a phase transition in this model

Reverso, Neuilly-sur-Seine *Jun. 2021 - Aug. 2021*
Junior data analyst. Study of a grammatical correction tool, analysis and improvement of a text corpus

French National Gendarmerie, Villefranche-de-Rouergue *Dec. 2019 - Mar. 2020*
Aspirant in the Groupe de Commandement. Training the new recruits, operational work

COMMITMENTS AND SCIENTIFIC OUTREACH

Organisation of a workshop, Paris. *Recent Progress on Self-Interacting Processes and Non-Reversible Monte Carlo,* funded by PSL Statistical Physics and Mathematics program and a BOUM SMAI project	*May 2026*
Elected representative of PhD students in the *Conseil du laboratoire*, CEREMADE	*2025 -*
Responsible of the offices of PhD students, CEREMADE	*2024 -*
Organisation of the Young Researchers' Seminar, CEREMADE: *weekly seminar with talks by young researchers, for an audience of PhD students, postdoctoral researchers and Master students*	*2024 - 2025*
Middle school students' observation internship, Université Paris Dauphine - PSL: *meeting the students*	2024, 2025
Afternoon for high school girls, Université Paris Dauphine - PSL: *presentation and informal discussion*	*2024*
Voluntary academic support, *online tutoring in mathematics for Villefranche-de-Rouergue high school students during lockdown*	*2020*
Presenting scientific studies to high school students, Lycée Raymond Savignac, Villefranche-de-Rouergue	*2020*

FUNDING OBTAINED

– BOUM funding of the SMAI, for organising a workshop in May 2026
– Erasmus+ Doctoral Mobility grant, for a research stay at University of Warwick in July 2026
– AMX scholarship of Ecole polytechnique to fund my PhD 2023-2026

SKILLS

Languages:	French (first language), English (first language), Spanish (B2), Italian (B1), German (A1)
Programming:	Julia, Python, C++, Java, OCaml
Software & Tools:	LaTeX, Git, Adobe, Microsoft Office