Benoit Dagallier

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Positions and training

2023 – 2024	**Courant instructor** *Courant Institute of Mathematical Sciences, New York University.*
2021 – 2023	**Research associate** *DPMMS, Cambridge University*, supervised by Roland Bauerschmidt.
2018 – 2021	**Ph. D. thesis** *CMAP (Centre de Mathématiques APpliquées), Ecole Polytechnique*, title : "Large deviations in interacting particle systems: out of equilibrium correlations and interface dynamics", supervised by Thierry Bodineau. Defended September 13th 2021.
2017 – 2018	**Master 2 "Mathématiques de l'aléatoire" (Mathematics of randomness)** *Université Paris Sud, Orsay, France.*
2015 – 2017	**Master ICFP (International Centre for Fundamental Physics)** *Ecole normale supérieure, Paris, France,* (Master 1 and 2 in physics).
2014 – 2015	**Bachelor in mathematics and physics** *Ecole normale supérieure, Paris, France.*
2014 – 2018	**Student in Ecole normale supérieure.** *Ecole normale supérieure, Paris, France.*

Research articles

October 2023	**Fluctuations and correlations in the weakly asymmetric simple exclusion process on a ring subject to an atypical current**, submitted, preprint available at `https://hal.science/hal-04281437` and on arxiv `https://arxiv.org/abs/2310.16793`
October 2023	**Kawasaki dynamics beyond the uniqueness threshold,** *with Roland Bauerschmidt and Thierry Bodineau*, submitted, preprint available at `https://hal.science/hal-04236370` and on arxiv `https://arxiv.org/abs/2310.04609`
July 2023	**Stochastic dynamics and the Polchinski equation: an introduction,** *with Roland Bauerschmidt and Thierry Bodineau*, hal preprint available at `https://hal.science/hal-04163695` and arxiv preprint at `https://arxiv.org/abs/2307.07619`
December 2022	**Large deviations for out of equilibrium correlations in the symmetric simple exclusion process,** *with Thierry Bodineau*, request for minor revisions after first round of review in EJP, hal preprint available at `https://hal.archives-ouvertes.fr/hal-03912965` and arxiv preprint at `https://arxiv.org/abs/2212.11561`

February 2022	**Log-Sobolev inequality for near critical Ising models,** *with Roland Bauerschmidt*, accepted in CPAM, available at `https://arxiv.org/abs/2202.02301`
February 2022	**Log-Sobolev inequality for the φ_2^4 and φ_3^4 measures,** *with Roland Bauerschmidt*, accepted in CPAM, available at `https://arxiv.org/abs/2202.02295`
May 2020	**Motion by curvature and large deviations for an interface dynamics on $\mathbb{Z}^2$,** currently in revision after first round of review in PMP, available at `https://hal.archives-ouvertes.fr/hal-02615668v2` or on arxiv: `https://arxiv.org/abs/2005.12581`

Invited talks and research stays

March 31st – April 4th 2025	**UK Easter probability meeting** *Durham, United Kingdom.*
September 22nd – October 2nd 2024	**Invited lecture at School and Miniconference on Metric Measure Spaces, Ricci Curvature, and Optimal Transport** *Lake Como, Italy.*
September 18th-20th 2024	**Workshop: "Large scale behaviour of interacting diffusions: from stochastic control to functional inequalities"** *Padova, Italy.*
August 12th-16th 2024	**IMS conference** *Bochum, Allemagne.*
June 1st - July 15th 2024	**Research stay at IHES** *Bures sur Yvette, France.*
June 3rd 2024	**Probability seminar** *Rennes, France.*
February 8th 2024	**Probability seminar** *UW Madison, USA (online).*
January 11th 2024	**Probability and dynamical systems seminar** *Rouen, France.*
December 18th-22nd 2023	**talk in Oberwolfach** *Oberwolfach, Germany.*
November 20th 2023	**Cornell probability seminar** *Cornell university, Ithaca, USA.*
September 15th 2023	**Probability and mathematical physics seminar** *Courant institute of mathematical sciences, New York, USA.*
July 24th 2023	**Stochastic Processes and their applications** *Lisbon, Portugal.*
February 6th-10th 2023	**Research stay and 2h lecture on renormalisation method for log-Sobolev inequalities** *Ecole normale supérieure and Université Paris Dauphine*, invited by Cristina Toninelli.
January 23rd-27th 2023	**Research stay in Vienna** *TU Wien, Austria*, invited by Fabio Toninelli.

December 1st-2nd 2022	**Séminaire de probabilités Lyon 1 - ENS de Lyon** *Lyon, France.*
September 24th-28th 2022	**Mathematical physics seminar and stay at Université de Genève** *Genève, Suisse*, invited by Trishen Gunaratnam.
September 11th-17th 2022	**Short talk in research workshop** *Oberwolfach, Germany*, (25 minutes talk).
July 17th-23rd 2022	**Short talk in research workshop** *Oberwolfach, Germany*, (25 minutes talk).
June 30th 2022	**IMS conference** *London, United Kingdom.*
Mai 16th 2022	**Bath probability seminar** *Bath, United Kingdom.*
March-May 2022	**Participation and talk during "Probability and PDE" thematic semester** *CRM, Montréal, Canada.*
January 5th 2022	**5th colloquium on interacting particle systems** *Técnico Lisboa*, online talk.
October 20th-21st 2021	**Rencontres de probabilité** *Probability conference in Rouen, France.*
August 24th-28th 2020	**Bernoulli-IMS One World Symposium 2020**, online talk.

Teaching

2023-2024	**Teaching at Courant institute**
	○ Fall 2023: Calculus II (4h/week).
	○ Spring 2024: Ordinary differential equation (2h30/week).
2018-2021	**Teaching at Ecole polytechnique**
	○ Exercise classes in probability theory for 2nd year bachelor students for the course by Giovanni Conforti (CMAP) (in english).
	○ Exercise classes for the course "Theory of stochastic processes" for Master 2 students in the MSV master (Mathématiques et Sciences du Vivant), course by Sylvie Méléard (CMAP) (in french).
	○ Computational linear algebra exercise classes for 2nd year bachelor students for the course by Teddy Pichard (CMAP) (in english).
January 2020	**Outreach course within Parimaths** *(association organising outreach mathematics courses for highly motivated voluntary high-school and middle school students).*
2014 – 2015	**Mathematics "Colles"** *MPSI classe préparatoire, lycée Chaptal, Paris*, ("Colles" are 1 hour long sessions where groups of three students are given exercises to solve on blackboard in real time). 2 hours per week throughout the year.