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## Professional Experience

2023- **Postdoctoral researcher**, KTH, Stockholm, School of Electrical Engineering and Computer Science (EECS), Division of Decision and Control Systems (DCS)  
Supervisor: Alexandre Proutière.

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## Education

2020-2023 **Ph.D. in Mathematics**, INRIA Paris, ENS and Aix-Marseille Université  
Supervisors: Laurent Massoulié and Charles Bordenave.  
2018-2019 **Master in Mathematics**, ENS Lyon  
2016-2020 **Student at Ecole Normale Supérieure de Lyon**

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## Publications and Preprints

### Preprints

- [1] Bastien Dubail, Stefan Stojanovic, and Alexandre Proutière. Shift before you learn: Enabling low-rank representations in reinforcement learning. *Accepted as Spotlight at NeurIPS 2025*. URL: <https://arxiv.org/abs/2509.05193>.
- [2] Bastien Dubail. Cutoff for mixtures of permuted Markov chains: general case. 2024. URL: <https://arxiv.org/abs/2402.03415>.
- [3] Bastien Dubail. Cutoff for mixtures of permuted Markov chains: reversible case. 2024. In revision in *Annals of Applied Probability*. URL: <https://arxiv.org/abs/2401.03937>.

### Journal papers

- [4] Bastien Dubail and Laurent Massoulié. Accelerating abelian random walks with hyperbolic dynamics. *Probab. Theory Relat. Fields*, 184(3-4):939–968, 2022. doi: 10.1007/s00440-022-01128-x.
- [5] Charles Bordenave and Bastien Dubail. Markovian linearization of random walks on groups. *Int. Math. Res. Not.*, 2023(11):9185–9220, 2023. doi:10.1093/imrn/rnac045.

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## Teaching

Tutorials given at Université Paris-Cité (2020-2023)

Fall 2022 Probability, Master’s degree (1st year)  
Spring 2022 Analysis, Maths-Social Sciences bachelor’s degree (1st year)  
Fall 2021 Analysis, CS-Maths bachelor’s degree (2nd year)  
Spring 2021 Analysis, Maths-Social Sciences bachelor’s degree (1st year)  
Supervision of math projects, Maths-Social Sciences bachelor’s degree (1st year)  
Fall 2020 Tutoring for bachelor students

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## Talks, Seminars, Workshops

2025 **INFORMS Applied Probability Society conference**, Georgia Tech, Atlanta, June 30 - July 03  
2025 **Conference ”Mixing Times between Probability, Computer Science and Statistical Physics”**, ICTP, Trieste, May 05-09

- 2024 **Stochastic Networks Conference**, KTH, Stockholm, July 01-05
- 2023 **Workshop YEP XVIII: “Spectra of random graphs and related combinatorial problems”**, Eurandom, Eindhoven, Mar. 27-31
- 2021 **Workshop ”The Cutoff phenomenon for Finite Markov Chains”**, Oberwolfach, Nov. 21-27
- Workshop ”On Future Synergies for Stochastic and Learning Algorithm”**, CIRM, Marseille, Sep. 27 - Oct. 01
- 2020 **Strukturtheorie Seminar**, TU Graz (virtual), Dec. 17
- Workshop ”Spectra, Algorithms and Random Walks on Random Networks”**, CIRM, Marseille, Jan. 13-17

## Previous Research Experience

Research internships

- 2020 **The linearization trick for random walks on finitely generated groups**, *Institut de Mathématiques de Marseille*, CMI Marseille, under the supervision of Charles Bordenave
- 2019-2020 **Mixing times for graph dynamics**, *INRIA*, Paris, under the supervision of Laurent Massoulié
- 2019 **The cutoff phenomenon and random walks on groups**, *Institut de Mathématiques de Marseille*, CMI Marseille, under the supervision of Charles Bordenave
- 2018 **Invasion percolation**, *University of British Columbia*, Vancouver, BC, under the supervision of Omer Angel
- 2017 **Weil’s conjectures**, *Institut Elie Cartan de Lorraine*, Vandœuvre-lès-Nancy, under the supervision of Damien Mégy

## Outreach

- 2022 Participation to Fête de la Science (annual nationwide event for promotion of science)
- 2018 Participation to Maths à Lyon (activities organised in high schools and middle schools of Lyon to promote mathematics)

## Language Skills

French Native  
 English Fluent  
 Swedish Basic

## Computer Skills

Programming Python  
 Other LaTeX