

WILLIAM FLEURAT  
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## Academic Interests

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Random trees, random maps, and their scaling limits. Stochastic processes. Log-concavity and total positivity. Probabilistic couplings.

## Research Positions

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*Sep 2024 – Present*

**Université Paris-Saclay**, Postdoctoral researcher at LMO.  
Funded by the ERC SuPerGRandMa (PI: Nicolas CURIEN).

## Education

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*Sep 2021 – May 2025*

**Ph.D. in Mathematics**, UMPA, ENS de Lyon.

- *Thesis title*: Monotone couplings and block decompositions of random trees and planar maps.
- *Advisor*: Grégory MIERMONT.

*Sep 2020 – Aug 2021*

**M.S. in Mathematics**, LPSM, Sorbonne Université.

*(highest honors)*

Research Master 2 degree, specialization in *Theoretical Probability*.

- *Topics*: Random graphs, Gaussian Multiplicative Chaos, Ergodic Theory, *etc.*
- *Thesis title*: A branching model of random maps.
- *Thesis supervisor*: Grégory MIERMONT.

*Sep 2019 – Aug 2020*

**M.S. in Mathematics**, IMT, Université Toulouse III Paul-Sabatier.

Research Master 2 degree, specialization in *Algebra, Dynamics, Geometry, Topology*.

- *Topics*: Holomorphic Dynamics, Complex Geometry, Algebraic Geometry, *etc.*
- *Thesis title*: Cantor spaces and their occurrences in 1-D polynomial dynamics.
- *Thesis supervisor*: Arnaud CHÉRITAT.

*Sep 2017 – Aug 2021*

**Student at the École Normale Supérieure**, Paris.

Admitted through the *Maths, Physics, Computer Science* (MPI) competitive exam.

Sep 2015 – Aug 2017

**Preparatory classes for *Grandes Écoles***, Lycée Joffre, Montpellier.  
*Major*: Maths and Physics.

## Publications and Preprints

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### *Preprints*

5. **Sweet Trims are made of Threes: A càdlàg erasure of the Brownian tree.**  
With Alessandra Caraceni, Nicolas CURIEN and Adrianus TWIGT.  
Preprint: [arXiv:2604.14138](https://arxiv.org/abs/2604.14138) (2026), 8 pages.
4. **Growing Self-Similar Markov Trees.**  
With Nicolas CURIEN and Adrianus TWIGT.  
Preprint: [arXiv:2512.16894](https://arxiv.org/abs/2512.16894) (2025), 59 pages.
3. **A Tauberian approach to metric scaling limits of random discrete structures, with an application to random planar maps.**  
Preprint: [arXiv:2510.05078](https://arxiv.org/abs/2510.05078) (2025), 63 pages.
2. **Growing conditioned BGW trees with log-concave offspring distributions.**  
Preprint: [arXiv:2411.03065](https://arxiv.org/abs/2411.03065) (2024). 57 pages.

### *Publications*

1. **A phase transition in block-weighted random maps.**  
With Zéphyr SALVY.  
In: *Electronic Journal of Probability*, **29** (2024), 61 pages. [arXiv:2302.01723](https://arxiv.org/abs/2302.01723)

### *Theses*

**Monotone couplings and block decompositions of random trees and planar maps.**  
*Ph.D. thesis*. 246 pages.  
Advisor: Grégory MIERMONT.  
Defended publicly on May 19, 2025. [HAL:tel-05272140](https://hal.archives-ouvertes.fr/hal-05272140) .

## In preparation

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**The Brownian bubble-tree.**  
With Grégory MIERMONT. In preparation (2026+).

**Conditioned Bienaymé trees almost grow.**  
In preparation (2026+).

## Talks

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### *Invited*

**Feb 2026.** *Probability Seminar*. King's College London, United Kingdom.  
**Dec 2025.** *Séminaire de calcul stochastique de Strasbourg*. Université de Strasbourg, France.  
**Sep 2025.** *Journée de rentrée d'équipe*. LMO, Université Paris-Saclay, France.  
**Apr 2025.** *Journée Math-STIC*. Université Sorbonne Paris-Nord, France.

**Nov 2024.** *Journée cartes.* ENS de Lyon, France.

### *Contributed*

**May 2025.** *Workshop “Statistical Physics out of equilibrium: Quantitative results and universality”.* Short talks session. MFO, Oberwolfach, Germany.

**Jan 2023.** *Workshop “Random Geometry”.* CIRM, Luminy, France.

**June 2022.** *“PIMS-CRM Summer School in Probability”.* Short talks session. UBC, Vancouver, Canada.

## Teaching

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*2025 – 2026*

**Probability and measure theory**, Université Paris-Saclay.

*Teaching Assistant*, 1 semester, 24 hours.

**Markov chains**, ENSTA Paris-Tech.

*Teaching Assistant*, 6 exercise sessions, 12 hours.

*2021 – 2024*

**Complex Analysis**, ENS de Lyon.

*Teaching Assistant*, 3 semesters, 24 hours each.

*2021 – 2023*

**Algèbre 2** (commutative algebra and Galois theory), ENS de Lyon.

*Teaching Assistant*, 2 semesters, 24 hours each.

## Supervision

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### *Internships*

**Sacha Bonici.** “Travail de Recherche Encadré” (TER) for the M1 in Applied Mathematics at LMO. May–June 2025. Subject: *“Epidemic models on random graphs”*. 2 months.

## Reviewing

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Currently a reviewer for an article submitted to the *Electronic Journal of Probability*.

## Organization

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### *SuPerGRandMa seminar*

Weekly seminar between the Probability and Statistics teams at LMO.

Past events: .

– **2025 – Present.** Organizer.

– **2024 – 2025.** Co-organizer with Matteo d’Achille.