William Da Silva

Postdoc in probability
University of Vienna

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Education

Post-doctoral fellow, University of Vienna — 2022 – present
Postdoc in Probability within the group of Prof. Nathanaël Berestycki
Principal Investigator on my own grant (Austrian Science Fund) from January 2024

PhD in Mathematics, Sorbonne Université, LPSM (Paris) — 2018–2022
Thesis Title: *Growth-fragmentation and multitype planar excursions*
Advisor: Élie Aïdékon (Sorbonne Université)
Jury: E. Aïdékon, N. Curien, T. Duquesne, B. Haas, A. Kyprianou, G. Miermont, Z. Shi

MSc in Mathematics, Sorbonne Université, Paris — 2017–2018
Master of Research, Majored in Probability, *Highest honours*
Master Thesis: *Compensated fragmentation processes*
supervised by Élie Aïdékon (Sorbonne Université)

Agrégation de mathématiques (teaching degree), ENS Paris-Saclay — 2016–2017
Ranked 3rd

Élève normalien, ENS Paris-Saclay — 2014–2018

Research Interests

Probability theory, mathematical physics, combinatorics. More precisely: random geometry, planar maps, statistical mechanics, Liouville quantum gravity, Schramm-Loewner evolutions, branching processes, spinal techniques, pattern-avoiding permutations, universality classes in permutons, directed geometry.

Teaching experience

Minicourse on Random Planar Geometry, University of Vienna — 2024
New graduate course for the Vienna School of Mathematics

Teaching Assistant, Sorbonne Université — 2019–2021
Bachelor level, *Functional Analysis* and *Measure Theory and Probability*, 128h

Teaching Assistant, École Polytechnique — 2018–2019
Master level, *Complex Analysis* and *Differential calculus*, 64h

Oral examiner ("colleur"), Lycées Henri 4 and Saint-Louis 2015–2018

Scientific responsibilities

Referee 2020–present
Annals of Probability, Random Structures and Algorithms, Journal de l'École Polytechnique, Probability and Mathematical Physics, Transactions of the AMS

Co-organiser of the Informal Probability Seminar (University of Vienna) 2024–present
With Marcin Lis, and then Ariane Carrance and Kieran Ryan

Organiser of PhD student seminar, Sorbonne Université, LPSM 2019–2020

Organiser and jury of French national high-school tournament TFJM^2 2018–2019

Organiser of student seminar, ENS Paris-Saclay 2014–2016

Grants

- P.I. of the Austrian Science Fund (FWF) grant on "Emergent branching structures in random geometry" (DOI: 10.55776/ESP534), amount 316,037 EUR
- ENS PhD grant, French Ministry of Research (2018–2021)

Publication List

- W. Da Silva, E. Powell, A. Watson. *Growth-fragmentations, Brownian cone excursions and* SLE_6 *explorations of a quantum disc.* arXiv:2501.03010.
- E. Aïdékon, W. Da Silva and X. Hu (2024). *The scaling limit of the volume of loop–*$O(n)$ *quadrangulations.* arXiv:2402.04827.
- W. Da Silva and J.C. Pardo (2024). *Spatial growth-fragmentations and excursions from hyperplanes.* Stochastic Processes and their Applications 181.
- W. Da Silva and J.C. Pardo (2024). *Multitype self-similar growth-fragmentation processess.* ALEA, Lat. Am. J. Probab. Math. Stat. 21, 985–1040.
- J. Borga, W. Da Silva and E. Gwynne (2024). *Power-law bounds for increasing subsequences in Brownian separable permutons and homogeneous sets in Brownian cographons.* Advances in Mathematics 439.
- W. Da Silva (2023). *Self-similar signed growth-fragmentations.* Electronic Journal of Probability 28, pages 1–45.
- E. Aïdékon and W. Da Silva (2022). *Growth-fragmentation process embedded in a planar Brownian excursion.* Probability Theory and Related Fields 183, pages 125–166.

Invited talks at seminars and conferences

- 2025 International Conference on Lévy processes, Sofia (Bulgaria) – *invited* by V. Rivero and M. Savov, July 2025
- SPA 2025 Conference (Wrocław) – *invited* by S. Penington, July 2025
- Vienna Probability Seminar, May 2025
- Branching and Persistence, Angers – *invited* by P. Thévenin, April 2025
- Inn'formal probability seminar (Innsbruck) – *invited* by S. Glazman, Mar 2025
- SEED Seminar (IHES) – *invited* by E. Kammerer, Mar 2025
- "Probas du vendredi" (seminar talk) – *invited* by Camille Tardif and Armand Riera, February 2025
- Séminaire SPOC de Dijon – *invited* by Patrick Tardivel, February 2025
- Annual conference of the "GDR Branchement" – *invited* by N. Curien and O. Hénard, January 2025
- MIT Probability seminar – *invited* by J. Borga, December 2024
- Séminaire de Probabilités de Besançon – *invited* by F. Bienvenu, October 2024
- Two-dimensional random geometry, Chicago – *invited* by E. Gwynne, July 2024
- Joint Mathematics Meeting (JMM2024), San Francisco – *invited* by Peter Winkler, January 2024
- Informal Probability Seminar, University of Vienna, December 2023
- Journées Cartes, Universität Zürich – *invited* by Armand Riera, June 2023
- Fudan University Probability seminar (online), June 2023
- UC Berkeley Probability seminar (California, US) – *invited* by Alan Hammond, January 2023
- Stanford Probability seminar (California, US) – *invited* by Jacopo Borga and Amir Dembo, January 2023
- BUC conference, Guanajuato (Mexico) – *invited* by Juan Carlos Pardo, January 2023
- Informal Probability Seminar, University of Vienna, January 2023
- Austrian Stochastic Days, University of Vienna, September 2022
- Probability and Mathematical Physics conference (poster), University of Helsinki, July 2022
- Seminar on Stochastic Processes, University of Zurich – *invited* by Jean Bertoin, May 2022
- Informal Probability Seminar, University of Vienna, November 2021
- UCL Probability and Statistics Seminar (online) – *invited* by Alexander Watson, October 2021
- Durham Probability seminar (online) – *invited* by Ellen Powell, April 2021
- Séminaire de Probabilités de Paris 13 (online) – *invited* by Clément Foucart, March 2021
- Séminaire de Probabilités d'Orsay, Université Paris-Sud (online) - *invited* by Nicolas Curien, September 2020

Skills and languages

- **Languages** French and English (fluent), Spanish and Portuguese (proficient), German (B1)
- **Programming** Scilab, Python, LaTeX, Git