

Guillaume Dubach

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Curriculum Vitae

General Informations

Surnames Guillaume, Paul.
Name Dubach.
Born 09/17/1990, Metz.
Citizenship french.
Family status Married, two children.

Education and Career

2023 – **Monge Professor**, *École Polytechnique*, Palaiseau
2022 – 2023 **FSMP fellow**, *École Normale Supérieure*, Paris
2020 – 2022 **ISTplus fellow**, *IST Austria*, Klosterneuburg, Autriche
2019 – 2020 **Research Assistant**, *Baruch College, City University of New York*, USA
2014 – 2019 **PhD student**, *Courant Institute, New York University*, USA
2009 – 2014 **Élève fonctionnaire-stagiaire**, *École Normale Supérieure*, Paris
2007 – 2009 **Classes préparatoires MPSI-MP***, *Lycée Louis-le-grand*, Paris
2004 – 2007 **High School**, *Lycée Jean de Pange*, Sarreguemines
2000 – 2004 **Middle School**, *Collège Joseph Cressot*, Sarreguemines

PhD Thesis

Title: *On integrable models of non-Hermitian random matrices.*
Director: Paul Bourgade. Defended on April 30, 2019.

Prizes and Awards

2019 **Wilhelm T. Magnus Memorial Prize**
'for significant contributions to the mathematical sciences.'
2018 **Newman Fellowship**

Published and accepted works

G. Dubach, *On the number of cycles in commutators of random permutations*, arxiv:2111.06311, to appear in *Annals of Applied Probability* (2024).

G. Dubach, J. Reker, *Dynamics of a rank-one multiplicative perturbation of a unitary matrix*, arxiv:2212.14638, to appear in *Random Matrices: Theory and Applications* (2024).

G. Dubach, P. Germain, B. Harrop-Griffiths, *On the derivation of the homogeneous kinetic wave equation for a nonlinear random matrix model*, *Ars Inveniendi Analytica* (2023), Paper No. 7, arxiv:2203.13748.

G. Dubach, L. Erdős *Dynamics of a rank one perturbation of a Hermitian matrix*, *Electronic Communications in Probability* **28** (2023), 1-13.

G. Dubach, *Explicit formulas concerning eigenvectors of weakly non-unitary matrices*, *Electronic Communications in Probability* **28** (2023), 1-11.

L.P. Arguin, G. Dubach, L. Hartung, *Maxima of a Random Model of the Riemann Zeta Function over Intervals of Varying Length*, arxiv:2103.04817, to appear in *Annales de L'Institut Henri Poincaré*.

T. Lucas, G. Dubach, *Counting Boeotians: Conscription Lists, Military Forces and Demography in Hellenistic Boeotia (285-171 B.C.)*, to appear in *Hesperia: the Journal of the American School of Classical Studies at Athens*.

A. Serebryakov, N. Simm, G. Dubach, *Characteristic polynomials of random truncations: moments, duality and asymptotics* (2022), to appear in *Random Matrices: Theory and Applications*.
<https://doi.org/10.1142/S2010326322500496>.

G. Dubach, *On eigenvector statistics in the spherical and truncated unitary ensembles*, *Electronic Journal of Probability* **26** (2021), 1–29.

G. Dubach, Y. Peled, *On words of non-Hermitian random matrices*, *The Annals of Probability* **49** no.4 (2021), 1886–1916.

P. Bourgade, G. Dubach, *The distribution of overlaps between eigenvectors of Ginibre matrices*, *Probability Theory and Related Fields* **177** (2020), 397–464.

G. Dubach, *Symmetries of the Quaternionic Ginibre ensemble*, *Random Matrices: Theory and Applications* (2020), 2150013.

G. Dubach, *Powers of Ginibre eigenvalues*, *Electronic Journal of Probability* **23** (2018), 1–31.

Work in preparation

P. Deift, G. Dubach, C. Tomei, T. Trogdon, *The Toda lattice and the eigenvalues of a random Hermitian matrix* (book)

Invitations to scientific events

- 2023 **Université d'Orsay**, *Séminaire de Probabilités*, speaker
- 2023 **Institut Henri Poincaré**, *Séminaire Matrices et Graphes Aléatoires*, mini-cours
- 2023 **Institut de Mathématiques de Marseille**, *Séminaire de Probabilités*, speaker
- 2023 **LPSM, Jussieu**, *Séminaire: Les Probas du vendredi*, speaker
- 2022 **Brunel University**, *XVIII Brunel-Bielefeld Workshop on Random Matrix Theory*, speaker
- 2022 **École Normale Supérieure**, *Journées de rentrée*, speaker
- 2022 **Université de Bordeaux**, *Probability Seminar*, speaker
- 2022 **Université de Lille**, *Workshop: Random matrices meet random permutations*, speaker
- 2022 **Université de Bielefeld**, *Bielefeld-Melbourne Random Matrices seminar*, speaker
- 2021 **Institut Henri Poincaré**, *Séminaire Matrices et graphes aléatoires*, speaker
- 2021 **LPSM, Sophie Germain**, *Séance du groupe de travail Modélisation*, speaker
- 2021 **IST Austria**, *Stochastics Seminar*, speaker
- 2020 **University of California San Diego**, *Probability Seminar*, speaker
- 2020 **TU Wien**, *Vienna Probability Seminar*, speaker
- 2020 **Oberwolfach workshop MFO 2025**, *Universality: Random Matrices, Random Geometry and SPDEs*, invited participant (event was canceled)
- 2020 **Georgia Tech**, *Stochastics seminar*, speaker (event was canceled)
- 2020 **University of Binghamton**, *Analysis seminar*, speaker
- 2019 **University of Binghamton**, *AMS session on Stochastic Evolution of Discrete Structures*, speaker
- 2019 **City University of New York**, *Probability Seminar*, speaker
- 2019 **IST Austria**, *Mathphys Analysis seminar*, speaker
- 2019 **Institut Henri Poincaré**, *Séminaire Matrices et graphes aléatoires*, speaker
- 2019 **New York University**, *Probability Seminar*, speaker
- 2019 **Temple University**, *Temple/Penn Probability Seminar*, speaker
- 2019 **MIT**, *Probability Seminar*, speaker
- 2018 **New York University**, *North-East Probability Seminar*, junior speaker
- 2018 **Israel Science Foundation**, *Yad Hashmona research workshop on Random Matrices, Integrability and Complex Systems*, speaker
- 2018 **City University of New York**, *Probability Seminar*, speaker

Referee

I have been a referee for the following journals.

- *Annals of Probability*
- *Annals of Applied Probability*
- *Electronic Journal of Probability*
- *Electronic Communications in Probability*
- *Annales de l'Institut Henri Poincaré*
- *Geometric and Functional Analysis*
- *Proceedings of the Royal Society A*
- *Journal of Physics A: Mathematical and Theoretical*
- *Journal of Automated Reasoning*
- *Random Matrices: Theory and Applications*
- *Mathematische Zeitschrift*

Other activities and responsibilities

- 2024 – Séminaire Matrices et Graphes Aléatoires (MEGA), co-organizer.
- 2024 Conference TURBULENT.E.S, co-organizer.
- 2024 Journée thématique sur les matrices aléatoires, co-organizer.
- 2023 – 2024 MAA201: Linear Algebra II, instructor (150 students).
- 2021 – 2022 IST Austria: *Probability and Statistics for life scientists*, instructor.
- 2021 – 2022 *Pre-screening* of PhD applications at IST Austria.
- 2021 *Teaching Didactics* workshop at IST Austria, participant.
- 2021 Scientific talk for summer interns at IST Austria.
- 2016 – 2019 Teaching Assistant for various classes at NYU.
- 2015 – 2019 Co-organiser of the Students' Probability Seminar at NYU.
- 2010 – 2013 Teaching Assistant at lycée Louis-le-Grand, Paris.