

Laura Monk

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Research experience

- 2022 – 25 **Research associate**, *University of Bristol (UK)*, PI: Jens Marklof.
Researcher Co-Investigator on EPSRC Standard grant EP/W007010/1
- 2021 – 22 **Postdoctoral fellow**, *Max Planck Institute for Mathematics, Bonn (DE)*,
mentored by Ursula Hamenstädt.
- 2018 – 21 **PhD in Mathematics**, *Institut de Recherche Mathématique Avancée, Strasbourg (FR)*, under the supervision of Nalini Anantharaman.

Education

- 2018 – 21 **PhD in Mathematics** under the supervision of Nalini Anantharaman,
Université de Strasbourg (FR).
- 2014 – 18 **École Normale Supérieure** in Mathematics with minor in Physics, *Paris*.
- 2017 – 18 **Master's degree in Mathematics** (with honours), *Paris-Sud University*.
- 2017 **Agrégation of Mathematics** (7th place).
Secondary-school and University Teaching degree
- 2014 – 15 **Bachelor's degree in Mathematics** (with honours), *Paris-Sud University*.
- 2014 – 15 **Bachelor's degree in Physics** (with honours), *Paris-Sud University*.
- 2012 – 14 **Preparatory class**, *Lycée Privé Sainte Geneviève, Versailles (FR)*.

Publications and preprints

- 2021 Anantharaman N., Monk L., *A high-genus asymptotic expansion of Weil-Petersson volume polynomials*, *Journal of Mathematical Physics* (In Press).
- 2021 Monk L., Thomas J., *The tangle-free hypothesis on random hyperbolic surfaces*, *International Mathematics Research Notices*, rnab160.
- 2021 Monk L., *Benjamini-Schramm convergence and spectrum of random hyperbolic surfaces of high genus*, *Analysis & PDE* (In Press).
- 2017 Fouvry J.B., Pichon C., Chavanis P., Monk L., *Resonant thickening of self-gravitating discs: imposed or self-induced orbital diffusion in the tightly wound limit*, *Monthly Notices of the Royal Astronomical Society*.

Awards and grants

- 2022 – 25 Researcher Co-Investigator on EPSRC Standard Grant EP/W007010/1, with Jens Marklof as Principal Investigator.
- 2021 Prize L’Oréal-UNESCO Young Talents France for Women in Science.
- 2021 Post-doctoral funding at the Max Planck Institute for Mathematics.
- 2019 Best poster in Mathematics prize from the Doctoral School.
- 2018 – 21 PhD grant from the ENS (Paris, FR).
- 2014 – 18 Full scholarship at the ENS (Paris, FR).

Invited talks

International conferences.

- Sept 2022 Shape Optimisation and Geometric Spectral Theory, *Edinburgh (UK)*.
- July 2022 Journées Nancéennes de Géométrie, *Nancy (FR)*.
- June 2022 Young women in Geometric Analysis, *Bonn (DE)*.
- May 2022 Laplacians on random hyperbolic surfaces and on random graphs, *Northwestern University (US)*.
- Feb 2022 14th Meeting of the GdR Quantum Dynamics, *Toulouse (FR)*.
- Feb 2022 Spectra and Dynamics on (Locally) Symmetric Spaces, *Paderborn (DE)*.
- Nov 2021 ANR “Aléatoire, Dynamique et Spectre” meeting, *Nantes (FR)*.
- Sept 2021 Hyperbolic dynamical systems and resonances, *Porquerolles (FR)*.
- Mars 2021 Young researchers in spectral geometry II, *Spectral geometry in the clouds*.
- Dec 2020 Jeunes géomètres dynamiques, *GdR Platon, Rennes (FR)*.
- Oct 2020 Billiards and Surfaces à la Teichmüller and Riemann Online.
- Nov 2019 8th Strasbourg / Zurich Meeting: Frontiers in Analysis and Probability, *Zurich (CH)*.
- May 2019 Spectral Theory and pRObability in Mathematical physics, *Strasbourg (FR)*.
- Apr 2019 Dynamics of geodesic flows and applications to PDEs, *Palaiseau (FR)*.

Mini-courses and colloquia.

- May 2022 Advance courses ‘Spectrum of the Laplacian and Geometry’, *University Cergy-Pontoise (FR)*.
- March 2022 Mathematics & Statistics Colloquium, *Dalhousie University*.

Seminars.

- 2022 Differential Geometry and Topology, *Cambridge (GB)*.
- Analysis and Geometry, *Bristol (GB)*.
- Reading seminar, *Paris Nord (FR)*.
- Topology and Dynamics, *Orsay (FR)*.

- 2021 Ergodic Theory and Dynamical Systems, *Bristol (GB)*.
 Probability and Statistics, *Marseille (FR)*.
 Geometry and Topology, *Jussieu (FR)*.
 Algebra, Geometry and Physics, *Bonn (DE)*.
 Number theory, *Tel-Aviv (IL)*.
 Probability and Mathematical Statistics, *Milan-Pavia (IT)*.
 Groups and Geometry, GdR Platon, *online seminar (FR)*.
 Geometry and Topology, *Toulouse (FR)*.
 Dynamical systems and ergodic theory, *Zurich (CH)*.
- 2020 Analysis, *Cardiff (GB)*.
 Geometry, *Leeds (GB)*.
 Dynamical systems, *Bremen-Oldenburg (DE)*.
 Oberseminar Differentialgeometrie, *Bonn (DE)*.
 Probabilities, *Orsay (FR)*.
 Geometrical Analysis by Frédéric Naud, *online (FR)*.
- 2019 Spectral theory and Geometry, *Grenoble (FR)*.
 Reading seminar with Federica Fanoni and Yohann Bouilly (co-organisation and two talks), *Strasbourg (FR)*.
- 2018 Analysis, *Strasbourg (FR)*.

Teaching

- 2020 – 21 **Lecturer**, *University of Strasbourg (FR)*, analysis - 2nd year.
- 2018 – 21 **Teaching assistant**, *University of Strasbourg (FR)*.
 2nd and 3rd year exercise sessions, preparation of the agrégation, mathematical circle (math club for high-school students), 1st and 2nd year oral exams.
- 2014 – 18 **Oral examiner in preparatory schools**.

Other activities

- 2018 and 19 **Organisation of the RJM**, *University of Strasbourg*.
 Three-day meeting for high school girls to conduct mathematical group activities, meet female researchers and engineers and speak about gender issues.
- 2017 and 21 **Jury for the TFJM²**.
 Conference-like mathematical competition for high-school students.
- 2017 **Outreach talk** for undergraduates, *Lycée Privé Sainte-Geneviève*.

Skills

- Languages French (mother tongue), English (fluent), Spanish (basic).
- Programming C, Caml, L^AT_EX, Maple, Mathematica, Python.