

# Laura Monk

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## Research experience

- 2021 – 22 **Postdoctoral fellow at the Max Planck Institute for Mathematics** mentored by Ursula Hamenstädt, *Bonn (Germany)*.
- 2018 – 21 **PhD** under the supervision of Nalini Anantharaman, *Institut de Recherche Mathématique Avancée, Strasbourg (France)*.

## Education

- 2018 – 21 **PhD in Mathematics** under the supervision of Nalini Anantharaman, *Université de Strasbourg (France)*.  
The spectrum of random hyperbolic surfaces of high genus
- 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 degrees** in Mathematics and in Physics (with honours), *Paris-Sud University*.
- 2012 – 14 **Preparatory class** in Mathematics and Physics, *Lycée Privé Sainte Geneviève, Versailles (France)*.

## Publications and preprints

- 2020 Anantharaman N., Monk L., *A high-genus asymptotic expansion of Weil-Petersson volume polynomials*, submitted.
- 2021 Monk L., Thomas J., *The tangle-free hypothesis on random hyperbolic surfaces*, International Mathematics Research Notices (In Press).
- 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

- 2021 Post-doctoral funding at the Max Planck Institute for Mathematics, *Bonn (Germany)*.
- 2019 Best Poster in Mathematics prize from the Doctoral School, *École Doctorale MSII, Strasbourg (France)*.
- 2018 – 21 PhD grant from the ENS Ulm.
- 2014 – 18 Full scholarship at the ENS Ulm.

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## Invited talks

### International conferences.

- 03/21 Mini-conference “Young researchers in spectral geometry II”, *Spectral geometry in the clouds (Université Laval, University college London)*.
- 12/20 Young researchers conference “Jeunes géomètres dynamiques”, *GdR Platon, Institut de recherche mathématique de Rennes (France)*.
- 10/20 “Billiards and Surfaces à la Teichmüller and Riemann Online”.
- 11/19 8th Strasbourg / Zurich Meeting: Frontiers in Analysis and Probability, *University of Zurich (Switzerland)*.
- 05/19 Workshop STROM : Spectral Theory and pRObability in Mathematical physics, *IRMA, Strasbourg (France)*.
- 04/19 Workshop Dynamics of geodesic flows and applications to PDEs, *ANR ISDEEC, École Polytechnique, Palaiseau (France)*.

### Seminars.

- 2021 Dynamical systems and ergodic theory in Zurich (Switzerland), Geometry and Topology in Toulouse (France).
- 2020 Analysis in Cardiff (UK), Geometry in Leeds (UK), Dynamical systems in Bremen-Oldenburg (Germany), Oberseminar Differentialgeometrie in Bonn (Germany), Probabilities in Orsay (France), Geometrical Analysis by Frédéric Naud (France).
- 2019 Spectral theory and Geometry in Grenoble (France).
- 2018 Analysis in Strasbourg (France).

### Other.

- 2019 Reading seminar on Weil-Petersson volumes and Mirzakhani’s recursion formula, with Federica Fanoni and Yohann Bouilly (organisation + two talks), *IRMA, Strasbourg (France)*.

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## Teaching

- 2020 – 21 **Lecturer**, *University of Strasbourg (France)*, analysis - 2nd year.
- 2018 – 21 **Teaching assistant**, *University of Strasbourg (France)*.  
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**.

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## 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 TFJM<sup>2</sup>**.  
Conference-like mathematical competition for high-school students.
- 2017 **Outreach talk** for undergraduates, *Lycée Privé Sainte-Geneviève*.

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## Skills

- Languages French (mother tongue), English (fluent), Spanish (basic).
- Programming C, Caml, L<sup>A</sup>T<sub>E</sub>X, Maple, Mathematica, Python.