

Alix Deleporte

+33 609994366
✉ alix.deleporte@math.uzh.ch
📄 deleporte.net

Education

- 2016–2019 **PhD**, *IRMA*, University of Strasbourg.
The low-energy spectrum of Toeplitz operators
- 2012–2016 **DENS**, *École Normale Supérieure (ENS)*, Paris.
Major in math, minor in physics
- 2013–2015 **MSc**, *ENS and Paris-Sud University*.
Partial Differential Equations and Scientific Computing, A+
- 2012–2013 **Double BSc**, *ENS and Paris-Sud University*.
Double major in math and physics, A+
- 2010–2012 **MPSI - MP***, *Lycée Louis-le-Grand*, Paris.

Research experience

- since 2020 **Postdoctoral researcher**, *Institut für Mathematik*, University of Zurich.
- 2019 **Postdoctoral researcher**, *MSRI*, Berkeley.
- 2016–2019 **Graduate student researcher**, *IRMA*, University of Strasbourg.
Advisor: Nalini Anantharaman
- 2015–2016 **Research internship**, *IRMA*, University of Strasbourg.
Advisor: Nalini Anantharaman
- 2015 **MSc Internship**, *IRMA*, University of Strasbourg.
Advisor: Nalini Anantharaman
- 2013 **BSc Internship**, *ENS and CEA*.
Advisors: Benjamin Texier and Thierry Foglizzo

Publications

- 2020 Toeplitz operators with analytic symbols, *Journal of Geometric Analysis*, Advance online publication
- 2020 Low-energy spectrum of Toeplitz operators with a miniwell, *Comm. Math. Phys.*, in press
- 2019 Low-energy spectrum of Toeplitz operators: the case of wells, *J. Spectral Theory* 9, pp. 79–125

Preprints

- 2020 A direct approach to the analytic Bergman projection (with Michael Hitrik and Johannes Sjöstrand), [arXiv:2004.14606](https://arxiv.org/abs/2004.14606)
- 2020 Uniform spectral asymptotics for semiclassical wells on phase space loops (with San Vũ Ngọc), [arXiv:2002.00234](https://arxiv.org/abs/2002.00234)
- 2020 Fractional exponential decay in the forbidden region for Toeplitz operators, [arXiv:2001.07921](https://arxiv.org/abs/2001.07921)
- 2019 WKB Eigenmode construction for analytic Toeplitz operators, [arXiv:1901.07215](https://arxiv.org/abs/1901.07215)
- 2018 Toeplitz operators with analytic symbols, [arXiv:1812.07202](https://arxiv.org/abs/1812.07202)
- 2018 The Bergman kernel in constant curvature, [arXiv:1812.06648](https://arxiv.org/abs/1812.06648)
- 2018 Quantum selection for spin systems, [arXiv:1808.00718](https://arxiv.org/abs/1808.00718)

Grants and scholarships

- 2020 **Postdoctoral grant “Forschungskredit”**, *University of Zurich*.
- 2019 **Postdoctoral Fellowship**, *MSRI*, program “Microlocal analysis and applications”.
- 2018 **Blaise Pascal grant**, *organisation of a highschool mathematical tournament*.
- 2016–2019 **PhD grant**, *École Normale Supérieure*.
- 2012–2016 **Full scholarship at École Normale Supérieure**.

Talks at seminars and colloquia

International conferences

- 02/2020 **Conference of the GDR Dynqua**, Strasbourg (France).
- 03/2019 **Crosscurrents in number theory, analysis and geometry**, Paris (France).
- 08/2018 **Franco-Romanian Conference in Applied Mathematics**, Bordeaux (France).
- 09/2017 **ASPECT17: Asymptotic Analysis and Spectral Theory**, Trier (Germany).
- 06/2017 **Spectral Geomerty, Graphs, Semiclassics and Dynamics**, Peyresq (France).
- 12/2016 **New trends in semiclassical analysis**, Chalès (France).
- 05/2016 **Quantum mechanics meet symplectic topology**, Tel Aviv (Israel).

Seminars, summer schools

- 06/2020* **Seminar on Geometry, PDE and Mathematical Physics**, Cergy-Pontoise.
- ??/202?* **Applied Analysis seminar**, Marseille.
- 03/2020 **Seminar on Numerical Analysis and PDEs**, Orsay.
- 02/2020 **Analysis seminar**, Nantes.
- 01/2020 **Mathematical Physics seminar**, *ICJ*, Lyon.
- 01/2020 **Seminar on geometries and topology**, *IMJ-PRG*, *Sorbonne Université*, Paris.
- 01/2020 **Mathematical Physics seminar**, *Institut Fourier*, Grenoble.
- 01/2020 **Seminar on mathematical physics and PDEs**, *Université Paris 13*, Villetaneuse.
- 09/2019 **MSRI Seminar**, Berkeley (US).
- 09/2019 **HADES Seminar**, Berkeley (US).
- 07/2019 **Analysis Seminar**, Nantes.
- 11/2018 **Mathematical Physics seminar**, Tübingen (Germany).
- 10/2018 **Mathematical Physics seminar**, *Institut Fourier*, Grenoble.
- 09/2018 **Mathematical Physics seminar**, *Universität Zürich* (Switzerland).
- 05/2018 **Working group on mathematical physics**, *Université Paris-Saclay*, Orsay.
- 10/2017 **PhD days Henri Lebesgue**, Rennes.
- 10/2017 **Analysis seminar**, Rennes.
- 03/2017 **Resonances: Geometric Scattering and Dynamics**, *CIRM*, Marseille.
- 10/2016 **Mathematical Physics seminar**, Nantes.
- 09/2016 **Working group on mathematical physics**, *Institut Fourier*, Grenoble.
- 07/2015 **Quantum ergodicity and harmonic analysis**, Marburg (Germany).

Teaching experience

- 2020 **Teaching Assistant**, *Institut für Mathematik, Universität Zürich (Switzerland)*.
Probabilities 1
- 2015–2019 **Teaching Assistant**, *UFR Math-Info, Université de Strasbourg*.
 - Analysis 101
 - Analysis 202 (Improper integrals, series and sequences of functions, Fourier series)
 - Mathematical Circle: mathematical activities for high school students
- 2019 **Teaching Assistant**, *CIRM, SMF School “États de la recherche”*, from classical to quantum.
- 2013–2016 **Teaching Assistant**, *“Colleur”*: weekly oral exercise sessions for college students.
Lycées Louis-le-Grand (Paris), Condorcet (Paris), Kléber (Strasbourg)
- 2014 **Teacher**, *Animath*.
Preparation for mathematical olympiads

Teaching publications

- 2016 **Les clés pour l'écrit**, *Ed. Calvage & Mounet*, ISBN 978-2-916352-45-9.
with Bernard Randé and Quentin Guignard
Commented solutions of the 2015 national competitive entrance exams for engineering schools

Service

- 2019–2021 **Deputy member of the executive board of Institut Henri Poincaré**, *Paris*.
Peer-reviewing.
Two reviews in top 15 mathematical journals
- 2017–2018 **Working group**, *Strasbourg*.
Organization of a weekly working group on uncertainty principles and unique continuation
Some lecture notes are available at deleporte.net/dotclear/index.php?pages/Research
- 2018 **RJM**, *Strasbourg*.
Regional conference and research workshop for female high school students
- 2016–2018 **TFJM²**, *Strasbourg*.
Regional competition for high school students, taking the form of research workshops