

# Curriculum Vitæ - Gaétan LECLERC

August 2025

Born 27/11/1997 in Saint-Benoît-la-Forêt, France  
French Nationality

I am currently a postdoc at the *Department of Mathematics and Statistics* in the University of Helsinki with [Tuomas Sahlsten](#). I was previously a PhD Student at Sorbonne University, in Paris, with [Frederic Naud](#).

Professional address:

P.O. Box 68 (Pietari Kalmin katu 5) FI-00014 University of Helsinki

email: [gaetan.leclerc@helsinki.fi](mailto:gaetan.leclerc@helsinki.fi) , [gaetan.leclerc@imj-prg.fr](mailto:gaetan.leclerc@imj-prg.fr)

webpage: [perso.imj-prg.fr/gaetan-leclerc/](https://perso.imj-prg.fr/gaetan-leclerc/)

arXiv: [link here](#).

## Research interests

**Hyperbolic/Parabolic dynamical systems**, harmonic analysis, exponential mixing, thermodynamical formalism, additive combinatorics, sum-product phenomenon, Fourier dimension, fractals.

I am currently learning about: semiclassical analysis, quantum chaos, quantum scarring, quantum transport in  $\ell^2(\mathbb{Z})$ , quasicrystals.

## Publications and preprints

- G. Leclerc. Fourier decay of equilibrium states and the Fibonacci Hamiltonian. Preprint (2025) [arXiv:2507.23731](#).
- G. Leclerc, S. Paukkonen, T. Sahlsten. Fourier Dimension in  $C^{1+\alpha}$  Parabolic Dynamics. (2024) (Submitted to JEMS) [arXiv:2505.15468](#).
- I. Bailleul, N.V. Dang, L. Ferdinand, G. Leclerc, J. Lin. Spectrally cut-off GFF, regularized  $\Phi^4$  measure, and reflection positivity (2024) (submitted to *Annales Henri Poincaré*) [arXiv:2312.15511](#)
- G. Leclerc. Fourier decay of equilibrium states on hyperbolic surfaces (2023). (submitted to *Mathematical Research Letters*) [arXiv:2307.10755](#)
- G. Leclerc. Fourier decay of equilibrium states for bunched attractors. *Nonlinearity*, Volume 37, Number 9 (2024). [doi:10.1088/1361-6544/ad6052](#)
- G. Leclerc. On oscillatory integrals with Hölder phases. *Discrete and Continuous Dynamical Systems*. (2023) [doi:10.3934/dcds.2023103](#)
- G. Leclerc. Julia Sets of Hyperbolic Rational Maps have Positive Fourier Dimension. *Commun. Math. Phys.* 397, 503–546 (2023). [doi:10.1007/s00220-022-04496-6](#)

## Teaching

Main teacher:

- Calculus IA: Limits and differentiation. (Helsinki University, October/November 2025).

Teaching assistant:

- Metric Differential Geometry of curves and Surfaces (L2, INSA Rennes 2020).
- Linear Algebra and Probability (LU1MA002, Sorbonne Université, 2022).

- Series and function series (LU2MA260, Sorbonne Université, 2022).
- Measure theory and probability (LU3MA263, Sorbonne Université, 2023).
- Complex analysis (LU3MA266, Sorbonne Université, 2023).
- Convex Analysis and Optimisation (Master Level, Helsinki University, 2024)

Students:

- Martin Bacques (L3 2023, Paris, informally)
- Alexandre Minetto (MsC 2025, Helsinki, jointly with Tuomas Sahlsten)

**Conferences and seminars**

Conferences and workshop:

- Invited speaker. Roscoff, march 8 – march 12, 2022 , “Rigidity, Inverse Problems and hyperbolic dynamics”. Organizer: Colin Guillarmou.
- Invited speaker. Grenoble, 27-28 March 2023, “Meeting of the ANR ADYCT: Aléatoire, Dynamique et Spectre”. Organizers: Vincent Boffard, Frédéric Faure, Damien Gayet, Erwan Lanneau. [Website here](#).
- Participant. Les Diablerets, May 28 – June 2, 2023. “Analytic techniques in Dynamics and Geometry” Organizers: Artur Avila, Mihajlo Cekic, Thibault Lefeuvre. [Website here](#).
- Invited speaker (2 hours talk). IMJ-PRG, Paris. November 27, 2023. “Hyperbolic dynamics and semiclassical analysis”. Organizer: Thibault Lefeuvre. [Website here](#).
- Invited speaker, Zurich, 9-13 September 2024. “Rigidity phenomena in dynamics and spectral geometry”. Organizers: Mihajlo Cekić, Corinna Ulcigrai.
- Invited speaker, Manchester, 10-14 September 2024. “Dynamical systems, number theory and quantum chaos”. Organizers: Amir Algom, Simon Baker, Thomas Jordan, Tuomas Sahlsten, Roman Schubert, Yotam Smilansky. [Website here](#)
- Participant. Nantes, 12-13th November 2024, “Meeting of the ANR ADYCT: Aléatoire, Dynamique et Spectre”. Organizers: Gabriel Rivière and Yann Chaubet. [Website here](#)

Given research talks (seminars):

- Seminar of ergodic theory, Rennes, 17 october 2022. Invited by Sebastien Gouezel.
- Seminar of analysis, Nantes, 23 january 2023. Invited by Joackim Bernier and Gabriel Rivière.
- Ergodic Theory and Dynamical Systems Seminar, Warwick, 20 June 2023. Invited by Julia Slipantschuk.
- MIT PDE/Analysis Seminar, Boston, 12 september 2023, invited by Semyon Dyatlov.
- Mathematical Physics seminar, Aalto University in Espoo, Finland, 03 October 2023, invited by Tuomas Sahlsten.
- Seminar in Arithmetic and Algebraic Dynamics, Sorbonne Université, Paris, 26 April 2024, invited by Romain Dujardin and Charles Favre. [video website](#)
- Analysis Seminar, IRMA, Strasbourg, 16 May 2024, invited by Nalini Anantharaman.
- Geometric and Functional Analysis Seminar, University of Helsinki, Finland, 12 December 2024, invited by T. Sahlsten.

Given research talks (Misc):

- “ACG Day” at the IMJ-PRG, 16 June 2022.
- Doctoral seminar, Strasbourg, 13 january 2022.
- Dynamics and Group Geometry Early Researchers (DAGGER), Warwick, 19 June 2023. Invited by William O’Regan.
- Ergodic theory and dynamical systems working group, Orsay, 25 March 2024. Invited by Bruno Santiago.
- PhD Defense, 6 November 2024, Sorbonne University, Paris.
- Informal seminar on quantum and classical chaos, Helsinki, 04 December 2024. (Organized by Søren Mikkelsen and myself)

### Education

- 2024 - ????: Postdoc with Tuomas SAHLSTEN in Helsinki, Finland.
- 2021 - 2024: PhD with Frederic NAUD at IMJ-PRG (Paris, France)
- 2021: Master's degree in pure Mathematics (Rennes, France). (Valedictorian)
- 2020: *Agrégation de Mathématiques*, [rank 3](#)
- 2018: Bachelor's Degree in Physics
- 2017 - 2021: Maths studies in *Ecole Normale Supérieure de Rennes* (Rennes, France).
- 2014 - 2017: Classes préparatoires aux grandes écoles (Tours, France)

### Organization of seminars

- Since October 2024, with Søren Mikkelsen, we organize an informal seminar in the University of Helsinki on the topics of quantum and classical chaos. This is aimed for the PhD students and postdocs of [Tuomas Sahlsten](#) to discuss together on their research topics, but this is open to anyone interested.

### Organization or participation to other mathematical events

- 2017: Supervisor in the RJM (Rencontre des Jeunes Mathématiciennes) in Rennes, an event to promote women in maths. See [here](#) for more informations.
- 2017: Jury in the TFJM (Tournoi Français des Jeunes Mathématicien-nes). See [here](#).
- 2018: Supervisor and speaker in the RJM. Some memories [here](#).
- 2018: Jury in the TFJM.
- 2018: *Team manager* of the team “Ln et les garçons” (France 2) at [ITYM](#) (International Tournament of Young Mathematicians). [First prize](#) (second position).
- 2019: Jury in the TFJM.