

Theotime Girardot

PostDoc in Mathematical Physics

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Education

- 2019–2021 **PhD in mathematical physics**, supervised by *Nicolas Rougerie*, LPMMC, Grenoble, France
- 2015–2018 **University Grenoble Alpes**, (*UGA*), Grenoble, France, Master : Matière Quantique obtained with honors
- 2013–2014 **First year of Engineer school**, *INP Pagora*, Grenoble, France
- 2010–2013 **Scientific preparatory class PTSI**, *Lycée Duhoda*, Nîmes, France
- 2009–2010 **Bachelor's degree**, *Lycée Jean-Baptiste Dumas*, Alès, France, Options SI and Maths

Professional Background

- 2024–2026 **PostDoc position**, *Gran Sasso Science Institute*, L'Aquila, Italy, In the group of *Serena Cenatiempo*
Conferences, talks and publications, see lists below.
- 2021–2023 **Teaching at Aarhus University**, responsible of *maths exercise sessions for first and second year students in maths for the course of analysis*, 3h a week for two semesters, Denmark
- 2021–2023 **PostDoc position**, *Aarhus University*, Denmark, Supervised by *Søren Fournais*
Conferences, talks and publications, see lists below.
- 2018–2021 **Teaching at UGA**, responsible for two semesters, 6h a week, of *maths exercise sessions and exams writing/corrections for first and second year students in physics for the courses of analysis, linear and bilinear algebra*, Grenoble, France
- 2018–2021 **PhD in mathematical Physics**, supervised by *Nicolas Rougerie*, LPMMC, Grenoble, France
Conferences, talks and publications, see lists below.
- 2017 **Experimental internship in fluid mechanics**, directed by *Philippe Marmottant*, LyPhy, Grenoble, France
Implementation of an experimental setting, measures and data processing.

Langages

English Fluent, can teach in English
Italian B1

Coding: Phyton, L^AT_EX, C++ and Visual Basic

Conferences

- Scaling limit in Kinetic theory, ENS, Lyon (2019)
- From Quantum to Classical, CIRM, Marseille (2019)
- ICMP, Geneva (2021)
- INdAM Quantum Meetings in Milan (2022)
- The analysis of relativistic quantum systems, CIRM, Marseille (2023)
- Quantum hub, Copenhagen (2023)
- Correlations in Mathematical Quantum Mechanics, Copenhagen (2023)
- Hausdorff School, Recent Advances in Quantum and Statistical Mechanics, Bonn, Germany (2023)
- Winter School on Mathematical Physics, Kochel am See, Germany (2024)
- Mathematical challenges in quantum mechanics, GSSI L'Aquila, (2025)

Talks and seminars

- Physics seminar of LPMMC (R. Anna Minguzzi): Experimental evidences of fractional statistics
- Mathematical physics seminar of the universities of Warsaw (Pr. Marcin Napiórkowski): Topological origin of anyons and almost-bosonic limit
- Bazel (Pr. Chiara Saffirio) : Semiclassical limit for almost fermionic anyons
- Vienna (Pr. Robert Seiringer) : Semiclassical limit for almost fermionic anyons
- LMU, Munich at the Calculus of Variations and Applications seminar (Pr. Phan Thành Nam and D. Arnaud Triay) : A lieb–thirring inequality for extended anyons
- Institut Mathématique de Bordeaux, PDE seminar (APr. Jean Baptiste Burie) : Introduction to the concept of anyonic particles
- Quantum lunch Copenhagen (Pr. Soeren Fournais) : A lieb–thirring inequality for extended anyons
- SMAQ seminar GSSI (Pr. Serena Cenatiempo) : Introduction to the concept of anyonic particles
- PDE seminar Uppsala university (Pr. Douglas Lundholm): The thermodynamic limit of the free energy of dilute Bose gases at low temperatures interacting via strong potentials
- Quantum lunch (Pr. Soeren Fournais): Superfluidity of the dilute Bose gas at low temperature

Thesis

1. T. Girardot, Mean-field approximation for the anyon gas, PhD thesis, Université Grenoble Alpes et CNRS, l'École Doctorale Mathématiques, Sciences et technologies de l'information, Informatique, 2021.

Publications

1. T. Girardot,
Average field approximation for almost bosonic anyons in a magnetic field,
J.Math. Phys., 61 (2020), pp. 071901, 23.
2. T. Girardot and N. Rougerie,
Semiclassical limit for almost fermionic anyons,
Communications in Mathematical Physics, 387 (2021), pp. 427–480.
3. T. Girardot and N. Rougerie,
A lieb–thirring inequality for extended anyons,
Letters in Mathematical Physics, 113 (2023), p. 6
4. S. Fournais, T. Girardot, L. Junge, L. Morin, and M. Olivieri,
The ground state energy of a two-dimensional bose gas,
Communications in Mathematical Physics, 405 (2024), p. 59.
5. S. Fournais, T. Girardot, L. Junge, L. Morin, and M. Olivieri,
Lower bounds on the energy of the bose gas,
Reviews in Mathematical Physics, 36 (2024), p. 2360004.

Preprints

1. S. Fournais, L. Junge, T. Girardot, L. Morin, M. Olivieri, and A. Triay,
The free energy of dilute bose gases at low temperatures interacting via strong potentials,
arXiv:2408.14222, 2024.
2. T. Girardot and J. Lee,
Derivation of the Chern-Simons-Schrödinger equation from the dynamics of an almost-bosonic-anyon gas.
arXiv:2412.13080, 2024.