



Théotime GIRARDOT

PostDoc in Mathematical Physics

02-17-1992

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EDUCATION

LPMMC, Grenoble, France

2019 > 2021 PhD in mathematical physics under the supervision of Nicolas Rougerie.

Phd thesis: [Mean-field approximations for the anyon gas](#).

Topics: N-body physics, quantum mechanics, statistical physics, analysis methods.

Université Grenoble Alpes (UGA), France

2016 > 2018 Master Matière Quantique with honors.

Phase transition, second quantization, field theory, superconductivity, N-body physics.

General relativity, semi conductor, relativistic quantum mechanics, magnetism, atomic and nuclear physics.

2015 > 2016 Physics license: quantum mechanics, statistical physics, optics, relativity.

INP Pagora, Grenoble, France

2013 > 2014 First year of engineering school.

Topics: chemistry of wood, fluid mechanics, management, high voltage electricity.

Lycée Duhoda, Nîmes, France

2010 > 2013 Scientific preparatory class PTSI.

Lycée Jean-Baptiste Dumas, Alès, France

2009 > 2010 Bachelor's degree, option SI (Engineering Science) and Maths.

PROFESSIONAL BACKGROUND

Aarhus University, Denmark

2021 > 2023 PostDoc position in the group of Søren Fournais.

Topics: two and three dimensional Bose gas in the thermodynamic limit.

Lieb-Thirring inequalities for anyons and time dependent effective model for anyons dynamics.

Teaching for 1st and 2nd year students in analysis.

Conferencies:

- INdAM Quantum Meetings 2022 in Milan
- CIRM, Marseille 2023 «The analysis of relativistic quantum systems»

Talks:

- LMU, Munich at the Calculus of Variations and Applications seminar
- Institut Mathématique de Bordeaux at the PDE seminar
- Copenhagen University weekly seminar

LPMMC, Grenoble, France

2018 > 2021 PhD with Nicolas Rougerie. Research about anyons in two limits: big number of particles and almost bosonic/fermionic behavior. Exchanges and discussions with others scientifics, seminars, talks, publication.

Two summer schools:

- ENS, Lyon (69) «Scaling limit in Kinetic theory» (2019)
- CIRM, Marseille (13) «From Quantum to Classical»
- Geneva, ICMP 2021

Transversal courses:

- Job Hunting, how to teach efficiently, zetetics and science communication.

Talks:

- Defense of the PhD at LPMMC, Grenoble.
- Mathematical physics seminar of the universities of Warsaw (Mr. Marcin Napiórkowski), Bazel (Mrs. Chiara Saffirio), Vienna (Mr Robert Seiringer).

Université Grenoble Alpes (UGA), France

2020 Teaching algebra and basic analysis to physics students.

Algebra:

bilinear algebra to second-year students, scalar product, projectors and minimization methods, Fourier series.

Analysis:

Main theorems about continuity and derivability, differential equations, Taylor's expansion for freshmen.

Analysis in RN:

continuity, differentiability, integrals for second year students.

2018 Research internship from March to July with Nicolas Rougerie.

Familiarization with mathematical tools and little work about Landau levels.

Immersion in the research activity, seminars and discussions.

LyPhy, Grenoble, France

2017 Experimental internship under the direction of Philippe Marmottant during three months. Implementation of an experimental setting, measures and data processing. I have learned to code in Python and to work in a cleanroom.

Topics: bubbles resonance, fluid mechanics.

Imprimerie Clément, Le Vigan, France

July > August 2014 Engineering school internship. Six weeks to discover and to participate to the company operations. manufacturing, cleaning, delivery.

France

Summers from 2008 until 2016 Recreation center entertainer. Have worked on stress, team work, organization, social abilities, responsibility of children.

PUBLICATIONS

- Phd thesis: [Mean-field approximations for the anyon gas](#).
- Average field approximation for almost bosonic anyons in a magnetic field in *Journal of Mathematical Physics*, 61 (2020): [arXiv:1910.09310](#) [math.AP]
- Semiclassical limit for almost fermionic anyons in *Communications in Mathematical Physics*: [arXiv:2101.04457](#) [math-ph]
- A Lieb-Thirring inequality for extended anyons in *Letters in Mathematical Physics*, 113, Article number: 6 (2023): [arXiv:2209.02543](#)
- Lower bounds on the energy of the Bose gas in *Reviews in Mathematical Physics*: [arXiv:2305.00797](#)
- Pre-print: The Ground State Energy of a Two-Dimensional Bose Gas: [arXiv:2206.11100](#)

SKILLS

Fluent English.

LateX, Word, Excel, PowerPoint, C++, Visual Basic and Python.

N-body physics, quantum mechanics, statistical physics. Analysis.

Teaching.

HOBBIES

Sport: Tennis table, hiking, football

Music: guitar player