

Denis PÉRICE



Postdoctoral fellow in mathematical physics in [Sören Petrat](#)'s group at Constructor university Bremen. Read about my [research projects](#).

French, 29 yo

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🌐 <https://denis-perice.github.io/>

Formation

ENS Lyon - UMPA

📍 Lyon, France

📅 Oct 2020 - Oct 2023

PHD in mathematical physics - *Semi-classical limits of 2D fermions under high magnetic fields*

Supervisor: Nicolas Rougerie

ENS Lyon

📍 Lyon, France

📅 2020 - 2021

2nd year master courses in advanced mathematics

Calculus of variations and elliptic equations, kinetic theory

UGA¹ - UFR-Phitem²

📍 Grenoble, France

📅 2019 - 2020

Master degree in physics - *specialisation in condensed matter physics*

Quantum physics, solid state physics, statistical physics, quantum field theory, relativity, computational physics

Mention good

UGA - Institut Fourier

📍 Grenoble, France

📅 2018 - 2020

1st year master courses in fundamentals mathematics

General algebra, differential equations, representation theory, differential geometry, functional analysis, stochastic processes

Grenoble INP³ - Phelma⁴

📍 Grenoble, France

📅 2018 - 2020

Engineering degree - *specialisation in Physics and nano-sciences*

Advanced electromagnetism, semiconductor physics, optical physics, numerical methods, experimental methods in physics and nano-sciences

Mention good

Institut Fourier - UGA

📍 Grenoble, France

📅 2017 - 2018

Courses from bachelor in mathematics

Algebra, topology, calculus, measure theory and probability theory

Grenoble INP - Phelma

📍 Grenoble, France

📅 2017 - 2018

Bachelor degree - *specialisation in physics, materials, processes*

Quantum mechanics, continuum mechanics, electronic, materials science, statistics, complex analysis, Fourier analysis

CPP⁵

📍 Grenoble, France

📅 2015 - 2017

Polytechnic preparatory cycle - *specialisation in mathematics and mechanic*

Lycée Jean Mermoz

📍 Montpellier, France

📅 2012 - 2015

High school degree in sciences - *specialisation in mathematics*

Mention very good

Research experience

Constructor university

📍 Bremen, Germany
📅 Nov 2023 - Aug 2026

Postdoc - DFG⁶ grant : *Asymptotic Expansions for the Weakly Interacting Bose Gas*

School of sciences
Supervisor: Sören Petrat

CNRS⁷ - UMPA⁸

📍 Lyon, France
📅 Oct 2020 - Oct 2023

PHD in mathematical physics - *Semi-classical limits of 2D fermions under high magnetic fields*

Modelization and analysis team, ENS Lyon⁹
Supervisor: Nicolas Rougerie

CNRS - LPMMC¹⁰

📍 Grenoble, France
📅 Mar - Jul 2020

Master Internship - *Mean Field limits for fermionic systems under high magnetic field*

Supervisor: Nicolas Rougerie

Osaka university - *Kuwahara lab*

📍 Osaka, Japan
📅 Jun - Aug 2019

Master Internship - *Study of a carbon nanotubes system with a spontaneous modification of conductance for the development of neuromorphic devices*

Supervisor: Megumi Akai-Kasaya

CNRS - Institut Néel

📍 Grenoble, France
📅 Jun - Aug 2018

Bachelor internship - *Measurement and analysis of Raman spectroscopy on ceramics, development of python codes for the data treatment*

Supervisor: Denis Testemale

CNRS - Institut Néel

📍 Grenoble, France
📅 May - Jun 2017

Bachelor internship - *Synthesis of new multiferroic compounds and characterization with X-ray diffraction*

Supervisor: Céline Darie

Scientific schools attended

- Jul 2024, Metz, [Summer School on Effective Approximation and Dynamics of Many-Body Quantum Systems](#)
- Aug 2022, Venice [Quantissima in the Serenissima IV](#)
- Jul 2021, Zürich [Summer School on Current Topics in Mathematical Physics](#)
- Aug 2017, Bruxelles [Brussels Summer School of Mathematics](#)

Teaching experience

Lecturer - 35h

📍 Constructor university,

📅 Sep 2025 - May 2026

1st year Applied Computer Science Bachelor - *Elements of calculus*

Online class

Lecturer - 35h

📍 Constructor university,

📅 Feb - May 2025

2nd year Bachelor of Mathematics - *Real Analysis*

Measure theory & Fourier analysis

Teaching assistant - 17.5h

📍 Constructor university,

📅 sep - dec 2024

3rd year Bachelor of Mathematics - *Real analysis*

Topology and functional analysis, supervisor: Shahnaz Farhat

Lecturer - 35h

📍 Constructor university,

📅 Feb - May 2024

2nd year Bachelor of Mathematics - *Analysis III*

Measure theory & differential calculus

TD¹¹/TP¹² - 36h

📍 Lyon 1 university,

📅 Jan - May 2023

L1¹³ Department of mathematics - *Analysis*

supervisor: Khaled Saleh

TD - 24h

📍 ENS Lyon,

📅 Sep - Dec 2022

L3¹⁴ Department of mathematics - *Topology and differential calculus*

supervisor: Emmanuel Grenier

Colles¹⁵ - 24h

📍 Lyon 1 university,

📅 Sep - dec 2022

L2¹⁶ CUPGE¹⁷

supervisor: Gaëlle Dejou

Lectures/TD - 54h

📍 Lyon 1 university,

📅 Sep 2021 - Jan 2022

L1 PCSI¹⁸ - *Techniques mathématiques de base (Introduction to analysis)*

supervisor: Ulysse Serres

Colles - 18h

📍 Lyon 1 university,

📅 Sep - dec 2021

L1 CUPGE

supervisor: Frank Wagner

Publications

- Preprint, [Ground state energy of the Bose–Hubbard model with large coordination number with a polaron-type quantum de Finetti theorem](#)
- Preprint, [Gyrokinetic limit of the 2D Hartree equation in a large magnetic field](#)
- Preprint, [Mean field dynamics of the Bose Hubbard model in large dimension](#)
- J. Math. Phys., [Multiple Landau level filling for a large magnetic field limit of 2D fermions](#)
- PHD thesis, [Semi-classical limits of 2D fermions under high magnetic fields](#)

Presentations

- Oct 2025, Paris, [Groupe de travail Physique mathématique](#), notes
- Oct 2025, Paris-IHP¹⁹, [séminaire Problèmes Spectraux en Physique Mathématique](#), notes
- Sep 2025, Munich, [QMATH16 Mathematical Results in Quantum Theory](#), poster, Springer prize
- Jul 2025, Twente, [International Workshop on Operator Theory and its Applications](#), slides
- May 2025, Oldenburg, [44th Northwest German Functional Analysis Colloquium](#), notes
- Mar 2025, Rennes, [Effective Approximation and Dynamics of Many-Body Quantum Systems Mini Workshop](#), notes
- Feb 2025, L'Aquila, [Mathematical Challenges in Quantum Mechanics school and workshop](#), slides
- Aug 2024, Bremen, [XLIV Dynamics Days Europe](#), slides
- Jul 2024, Metz, [Summer School on Effective Approximation and Dynamics of Many-Body Quantum Systems](#), poster
- Jul 2024, Strasbourg, [XXI International Congress On Mathematical Physics](#), slides
- Jun 2024, Hagen, [Walkshop on Mathematical Physics](#), slides
- Feb 2024, Braunschweig, [Symposium on Mathematical Physics](#), notes
- Sep 2023, Metz, [Kick-off Meeting: Effective Approximation and Dynamics of Many-Body Quantum Systems](#), notes
- Feb 2023, Bremen, [Mathematical and Theoretical Physics Seminar](#), notes
- Jan 2023, Lyon, UMPA & ICJ²⁰ - PHD seminar, notes
- Aug 2022, Venice, [Quantissima in the Serenissima IV](#), slides
- Jul 2022, Lyon, UMPA - EDP days, notes
- Jun 2021, Lyon, UMPA - modelization and analysis team seminar, slides
- Feb 2021, Lyon, UMPA - modelization and analysis team seminar, slides
- May 2020, Grenoble, [LPMMC weekly seminar](#), slides

Prizes and others

- Sep 2025, [Springer QMATH Poster Session Prize](#)
- Qualification MCF²¹ (N°24226402379) valid until 31/12/2028

Glossary

- ¹**UGA:** Université Grenoble-Alpes
- ²**UFR-Phitem:** Unité de Formation et de Recherche en Physique, Ingénierie, Terre, Environnement, Mécanique
- ³**INP:** Institut National Polytechnique
- ⁴**Phelma:** école nationale supérieure de PHysique ELelectronique MAtériAUX
- ⁵**CPP:** Cycle Préparatoire Polytechnique
- ⁶**DFG:** Deutsche Forschungsgemeinschaft (German Research Foundation)
- ⁷**CNRS:** Centre National de Recherche Scientifique
- ⁸**UMPA:** Unité de Mathématiques Pures et Appliquées
- ⁹**ENS Lyon:** École Normale Supérieure de Lyon
- ¹⁰**LPMMC:** Laboratoire de Physique et Modélisation des Milieux Condensés
- ¹¹**TD:** Travaux Dirigés (Exercise sessions)
- ¹²**TP:** Travaux Pratiques (applied exercise sessions)
- ¹³**L1:** First bachelor year
- ¹⁴**L3:** Third bachelor year
- ¹⁵**Colles:** Mathematics oral examination in small groups
- ¹⁶**L2:** Second bachelor year
- ¹⁷**CUPGE:** University preparatory cycle for selective french schools
- ¹⁸**PCSI:** Physic Chemistry and engineering sciences
- ¹⁹**IHP:** Institut Henri Poincaré
- ²⁰**ICJ:** Institut Camille Jordan
- ²¹**MCF:** Maître De Conférences