

# Denis PÉRICE

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

French, 27 yo    ✉ [dperice@constructor.university](mailto:dperice@constructor.university)    🔗 <https://denis-perice.github.io/>



## Research

---

### Constructor university

📍 Bremen, Germany

📅 Nov 2023 - Current

**Postdoc - DFG<sup>1</sup> grant** : *Asymptotic Expansions for the Weakly Interacting Bose Gas*

School of sciences - Department of Mathematics and Logistics  
supervisor: Sören Petrat

### CNRS<sup>2</sup> - UMPA<sup>3</sup>

📍 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 Lyon<sup>4</sup>  
supervisor: Nicolas Rougerie

### CNRS - LPMMC<sup>5</sup>

📍 Grenoble, France

📅 March - July 2020

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

supervisor: Nicolas Rougerie

### Osaka university - Kuwahara lab

📍 Osaka, Japan

📅 June - August 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

📅 June - August 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 - June 2017

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

supervisor: Céline Darie

## 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

### Courses from M2 in advanced mathematics

calculus of variations and elliptic equations, kinetic theory

### UGA<sup>6</sup> - UFR-Phitem<sup>7</sup>

📍 Grenoble, France

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

quantum physics, solid state physics, statistical physics, quantum field

🏠 2019 - 2020

theory, relativity, computational physics  
*Mention good*

UGA - Institut Fourier

📍 Grenoble, France

🏠 2018 - 2020

**Courses from Master 1 in fundamentals mathematics**

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

Grenoble INP<sup>8</sup> - Phelma<sup>9</sup>

📍 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**

general physics, mechanic, electronic, materials science, statistics, complex analysis, Fourier analysis

CPP<sup>10</sup>

📍 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*

## Teaching

---

**Teaching assistant - 17.5h**

📍 Constructor university,

🏠 sep - dec 2024

**2<sup>nd</sup> year Bachelor of Mathematics - Real analysis**

Topology and functional analysis, supervisor: Shahnaz Farhat

**Lecturer - 35h**

📍 Constructor university,

🏠 Feb - May 2024

**2<sup>nd</sup> year Bachelor of Mathematics - Analysis III**

Measure theory & differential calculus

**TD<sup>11</sup>/TP<sup>12</sup> - 36h**

📍 Lyon 1 university,

🏠 Jan - May 2023

**L1<sup>13</sup> Department of mathematics - Analysis**

supervisor: Khaled Saleh

**TD - 24h**

📍 ENS Lyon,

🏠 Sep - Dec 2022

**L3<sup>14</sup> Department of mathematics - Topology and differential calculus**

supervisor: Emmanuel Grenier

**Colles<sup>15</sup> - 24h**

📍 Lyon 1 university,

**L2<sup>16</sup> CUPGE<sup>17</sup>**

supervisor: Gaëlle Dejou

📅 Sep - dec 2022

**Lectures/TD - 55h**

📍 Lyon 1 university,

📅 Sep 2021 - Jan 2022

**L1 PCSI<sup>18</sup>** - *Techniques mathématiques de base (Introduction to analysis)*

supervisor: Ulysse Serres

**Colles - 18h**

📍 Lyon 1 university,

📅 Sep - dec 2021

**L1 CUPGE**

supervisor: Frank Wagner

## Publications

---

- PHD thesis, [Semi-classical limits of 2D fermions under high magnetic fields](#)
- J. Math. Phys., [Multiple Landau level filling for a large magnetic field limit of 2D fermions](#)
- Preprint, [Gyrokinetic limit of the 2D Hartree equation in a large magnetic field](#)
- WIP, [Mean field dynamics of the Bose Hubbard model in large dimension](#)

## Presentations

---

- 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 & ICJ<sup>19</sup> - 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

## Skills

---

- Computer sciences : Python (numpy, scipy), LaTeX, Beamer, fundamentals of Matlab and C
- Language : French native, English C1 level (BULATS certification), Espagnol A2

# Glossary

---

- <sup>1</sup>**DFG:** German Research Foundation
- <sup>2</sup>**CNRS:** Centre National de Recherche Scientifique
- <sup>3</sup>**UMPA:** Unité de Mathématiques Pures et Appliquées
- <sup>4</sup>**ENS Lyon:** École Normale Supérieure de Lyon
- <sup>5</sup>**LPMMC:** Laboratoire de Physique et Modélisation des Milieux Condensés
- <sup>6</sup>**UGA:** Université Grenoble-Alpes
- <sup>7</sup>**UFR-Phitem:** Unité de Formation et de Recherche en Physique, Ingénierie, Terre, Environnement, Mécanique
- <sup>8</sup>**INP:** Institut National Polytechnique
- <sup>9</sup>**Phelma:** école nationale supérieure de PHysique ELelectronique MATériaux
- <sup>10</sup>**CPP:** Cycle Préparatoire Polytechnique
- <sup>11</sup>**TD:** Exercice sessions
- <sup>12</sup>**TP:** Practical work
- <sup>13</sup>**L1:** First bachelor year
- <sup>14</sup>**L3:** Third bachelor year
- <sup>15</sup>**Colles:** Oral examination in small groups
- <sup>16</sup>**L2:** Second bachelor year
- <sup>17</sup>**CUPGE:** University preparatory cycle for selective french schools
- <sup>18</sup>**PCSI:** Physic Chemistry and engineering sciences
- <sup>19</sup>**ICJ:** Institut Camille Jordan