Pierre Wulles — Phd Student

LPMMC, CNRS and Université Grenoble Alpes – 38000 Grenoble, France

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French and English

Education

Université Grenoble Alpes   **Grenoble**
Master 2 in Fundamental Physics, with high honors   *2020–2021*
Specialization in subatomic physics and cosmology

Université Grenoble Alpes   **Grenoble**
Master 1 in Fundamental Physics   *2018–2019*
Master's degree in fundamental physics research

Phelma   **Grenoble**
École d'ingénieur   *2017–2018*
Engineering School specialized in Physics

Lycée Faidherbe   **Lille**
Prépa MPSI-MP   *2015–2017*
Preparatory classes for competitive engineering school entrance exams

Experience

UGA
Teaching Assistant   *Jan 2022–Present*
- Functional and Algorithmic Programming: Lectures, Tutorials, Practical work on OCaml. Concept. Designing multiple exam topics, numerous interactive quizzes for continuous assessment. See section Teaching. (2022-2024)
- Linear algebra: Oral exams (first year of bachelor's degree). (2022)
- Analysis: course for second-year biotechnology students. (2022)

LPMMC   **Supervised by Dr. Sergey Skipetrov**
PhD Student   *Oct 2021–Present*
- Topic: Light Propagation in Disordered Topological Metamaterials
- My thesis focused on wave propagation in media undergoing order-to-disorder transitions, with a specific emphasis on studying the topological properties of these media. To achieve this, I have conducted numerical simulations on clusters to model simple systems such as tight-binding models, as well as more complex systems such as light propagation in resonator networks.
- Regional finalist of *Ma thèse en 180 secondes* (science popularization contest)
- Skills used: C/C++, Python, Algebraic Topology, parallel programming, popularization.

LPMMC   **Supervised by Dr. Sergey Skipetrov**
Internship   *Mar–Jun 2021*
- Topic: Light Propagation in Honeycomb Networks of Point-like Scatterers

Lycée Jean-Paul Aubry   **Education nationale**
Math/Physics Teacher   *Sep 2019–Jun 2020*
- Topics: Mathematics and Physics. *(Teaching in a public highschool)*

IPAG   **Supervised by Dr. Pierre Hily-blant**
Internship   *Jun–Aug 2019*
- Topic: Study of a Pre-Stellar Core with MCMC methods, see the report here
- Skills used: Python, signal analysis, data analysis

CERN   **Supervised by Dr. Marc Bengulescu**
Internship   *May–Jul 2018*
○ Topic: Remote Forwarding of Human-Machine Interfaces for Industrial Controls
○ Skills used: Linux, Python, C/C++, Qt, Xpra

Skills

Programming: Python, C, OCaml, Bash *(daily use)*
Meep, Rust, C++, lisp *(occasional use)*

Illustration: Blender, Inkscape, Gimp *(weekly use)*

Operating Systems: Linux (Debian/Archlinux)

Others: Emacs, reveal.js *(tool for slides)*, Latex, TeXmacs, arduino, raspberry pi

Languages: French (native), English (fluent)

Publications

Skipetrov Sergey E and Wulles Pierre. Photonic topological anderson insulator in a two-dimensional atomic lattice. *Comptes Rendus. Physique*, 24(S3):1–16, 2023.

Wulles Pierre. Remote forwarding of human-machine interfaces for industrial controls. Technical report, CERN, 2018.

Skipetrov SE and Wulles P. Topological transitions and anderson localization of light in disordered atomic arrays. *Physical Review A*, 105(4):043514, 2022.

Pierre Wulles and Sergey E. Skipetrov. Topological photonic band gaps in honeycomb atomic arrays. *arXiv*, August 2023.