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Ewen Lallinec

Education

2023 – Present **PhD in Applied Mathematics**, *Laboratoire de Mathématiques d'Orsay, UPS*, Orsay, Thesis: "Finite size effects in the calculation of electronic structure properties".
Supervisor: Antoine Levitt

2021 – 2023 **Master of Science in Industrial and Applied Mathematics**, *Université Grenoble Alpes*, Grenoble.

2020 – 2023 **Engineering Degree in Computer Science and Applied Mathematics**, *Grenoble INP - Ensimag, UGA*, Grenoble.

2017 – 2020 **Preparatory Classes for Grandes Écoles (MPSI - MP)**, *Lycée Marceau*, Chartres.

Publications

Upcoming **Benchmark of Numerical Methods for Density of States Computation**.
Collaborative work with Antoine Levitt

Teaching and Tutoring

Université Paris Saclay - IUT of Orsay, Department of Physical Measurements

2023 – 2024 **Tutorial on Analysis (S1) - 45 hours**.

2023 – 2025 **Lab on Statistics (S1) - 16 hours**.

Tutorial on Multi-dimensional Integration (S5) - 18 hours.

2024 – 2025 **Tutorial on Statistics and Linear Algebra (S3) - 15 hours**.

Lab on Statistics (S3) - 4 hours.

Tutorial on Analysis and Linear Algebra (S2) - 28 hours.

Tutoring

2022 – 2023 **Mathematics Tutoring for Bachelor's Students**, *Université Grenoble-Alpes*, Saint-Martin d'Hères.

Computer Lab Assistant, *Université Grenoble-Alpes*, Saint-Martin d'Hères.

2018 – 2019 **Mathematics Tutoring for High School (Terminale S)**, *Lycée Marceau*, Chartres.

Oral Presentations

Seminars

Jan 2025 **Introduction to the Quantum Modeling of Materials**, *LMO Doctoral Outreach Seminar*, Orsay.

2025 **High-order Methods for Brillouin Zone Integration**.

- *CERMICS Young Researchers Seminar*, Champs-sur-Marne (Feb 2025)
- *LaMMe Doctoral Seminar*, Evry (Mar 2025)
- *LMO Analysis Doctoral Seminar*, Orsay (Mar 2025)

Conferences

Jul 2025 **High-order Methods for Brillouin Zone Integration in Electronic Structure**, *ICOSAHOM 2025*, Montreal.

Posters

Sep 2024 **Benchmark of Numerical Methods for Density of States Computation**, *MANUEL Conference*, Stuttgart.

Research Internships

Master 2 Internship

Feb 2023 – Aug 2023 ***Localization in Electronic Structure Models***.
Study of numerical integration methods over the Brillouin zone for periodic systems. Includes contour deformation and Wannier interpolation.

Supervisor: **Antoine Levitt**, Researcher, ANEDP Team, LMO

Master 1 Internship

May 2022 – Aug 2022 ***Analysis of the Parareal Algorithm for Highly Oscillatory Equations***.
Theoretical and numerical study of the parareal algorithm for highly oscillatory Hamiltonian systems. Analysis of convergence rates in the context of plasma equations (Penning trap, strongly varying magnetic field, etc.).

Supervisors: **Sever Hirstoaga**, Researcher, ALPINES Team, INRIA Paris **Julien Salomon**, Research Director, ANGE Team, INRIA Paris

Conferences and Schools Attended

Conferences

Jan 2024 **Workshop on Model Systems in Quantum Chemistry**, *Université Paul Sabatier*, Toulouse.

Sep 2024 **MANUEL Conference**, *Universität Stuttgart*, Stuttgart.

Nov 2024 **Julia Workshop on Numerical Challenges in Quantum Physics and Condensed Matter**, *CECAM*, Lausanne.

Jun 2025 **International Congress of Spectral and High-Order Methods (ICOSAHOM2025)**, *McGill University*, Montreal.

Schools

Aug 2023 **TRIQS Summer School**, *Centre Port-Royal*, Île-de-France.

May 2023, 2024, 2025 **Mini-school of the NBody Research Group on Mathematics for Quantum Chemistry and Physics**, *LJLL*, Paris.

Skills

Mathematics Numerical Analysis, Quantum Mechanics, Linear Algebra, Complex Analysis

Programming Julia, Python, C++

Tools LaTeX, Git, Linux