Eloïse Letournel

PhD student in applied mathematics at CERMICS (France)

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20/10/1998
Driving license

Education

2021-2024	**PhD in applied mathematics at CERMICS: Finite size effects in electronic structure calculation**, under the direction of Antoine Levitt, team Matherials (Champs sur Marne).
2020-2021	Engineering Student and **Master 2 student in applied mathematics**, at **ENSTA** (Palaiseau), Institut Polytechnique de Paris. Master AMS: Analysis, modelling and simulation. **Study of PDE and their implementation**.
2017-2021	**Engineering Student at École Polytechnique (Palaiseau)**, France's top engineering school. Applied mathematics, Quantum Physics, Algorithmics, Statistical Physics, Fluid Mechanics, Mathematics, Biology, Special Relativity.
2018-2019	**Collective Scientific Project (PSC) X-Rocket**, design and construction of an experimental rocket with Stealth Plasma for Polytechnique. Best PSC Award. In charge of the mechanics and contacts of the sponsors within the team of 10.
2015-2017	**Intensive 2-year university level preparation in Math and Physics**, Lycée Blaise Pascal (Orsay, France).
2014-2015	**Scientific Baccalaureate with Highest Honors**, Lycée Camille Claudel (Palaiseau, France). Specializing in Mathematics, with English option.

Professional experience

2021	**6-months internship at CERMICS, team Matherials**, computation of quantum resonances in solids and molecules .
2020	**18-weeks internship (telework) with the applied mathematics department of the FAU Erlangen**, structural optimization in the context of additive manufacturing.
2019	**Research and development 3-month internship at ST Microelectronics. Simulation of phase change non-volatile memories (semiconductors)**, Agrate (Italy).
2018 - 2019	**Oral examinations in Mathematics**, Advanced post Baccalaureate courses in Mathematics (France).
2017 - 2018	**In charge of interventions at the Paris fire Brigade (BSPP)**, Human and military formation internship (6 months). About 420 interventions, 1200 hours of work. I led teams of two firemen.

Publications and conferences

2023	**ICIAM**, Extraction of resonant states in systems with defects (Tokyo).
2022	**Some mathematical insights on Density Matrix Embedding Theory**, E. Cancès, F. Faulstich, A. Kirsch, E. Letournel, A. Levitt. preprint: arXiv:2305.16472
2023	**SIAM**, Numerical Analysis of Linear Response in TimeDependent Mean-Field Models of Quantum Mechanics (Amsterdam).
2022	**IPAM**, Advancing Quantum Mechanics with Mathematics and Statistics (workshops I-III) (Los Angeles).

2022   **Efficient extraction of resonant states in systems with defects**, I. Duchemin, L. Genovese, E. Letournel, A. Levitt, S. Ruget.
Journal of Computational Physics, Volume 477, article id. 111928.

Languages

French	Native language.
English	Fluent. (TOEFL score: 114)
Italian	Fluent.
German	Basic level of German.

Computer skills

Languages	Python, Julia
	C, Java, C++
	Matlab
	HTML, javascript, php
Modelisation	Solidworks, Catia
Database	SQL

Personal interests

Hobbies	Painting, running, debating club,guitar playing.
Volunteering	I am engaged in an association which takes disabled children to running events.