Florent Dupont

florent.dupont@math.unistra.fr

83 allée des Bocages
77360 Vaires sur Marne
+33 7 82 38 40 77

Education

2021-2023 **École normale supérieure de Lyon**
- Master of advanced mathematics, program geometry and dynamics
- Complex algebraic geometry (Sophie Morel), Holomorphic foliation (Stéphane Druel)
- Lie groups and symmetric spaces (Bruno Sevennec)
- Smooth dynamical systems (Jean-Claude Sikorav), Symplectic dynamics
- Algebraic topology
- Quantum field theory, general relativity, advanced quantum mechanics

2019-2023 **Admitted at Mines Paris - PSL - competitive exam**
- Mathematics: measure theory, differential calculus, complex analysis, signal processing, data science
- Quantum physics, statistical physics, construction of fundamental physics, atoms & lasers, particle physics
- Environment and climate change

2021 (6 months) **University of Bologna (exchange semester)**
- Quantum field theory, statistical field theory
- General relativity, theory of the Standard Model, gauge theory

2017-2019 **Lycée Saint-Louis, Preparatory class to "Grandes Ecoles"**
- Intensive preparation in mathematics and physics, MPSI-PSI*

Experience

2023-2026 **Institut de recherche mathématique avancée (IRMA, Strasbourg)**
- PhD under the supervision of Semyon Klevtsov, Geometry and Asymptotics of quantum Hall states
- Teaching of mathematics for first year chemistry students and biology students

2022 (3 months) **Institut de recherche mathématique avancée (IRMA, Strasbourg)**
- Research internship on gerbes of line bundles in Floquet systems, with Clément Tauber. Study of bundles gerbes, Čech cohomology, Deligne cohomology and the associated holonomy

2021 (2 months) **Office National d'Études et de Recherches Aérospatiales (ONERA)**
- Research internship in the information processing and system département. Study of the kernel of an operator associated to the electromagnetic propagation inside an optical exoplanet observation system

2020-2021 (3 months) **Laboratoire de Physique Théorique et Hautes Energies (LPTHE), Sorbonne University/CNRS**
- Research internship under the supervision of Filippo Sala, in the team "Particules physics and Cosmology"
- Sommerfeld enhancement of dark matter signals at telescopes
- Phenomenology of dark matter, Quantum mechanics

2020 (3 months) **Centre mathématiques et systèmes, Mines Paris - PSL**
- Realization of a raytracing program in C++ in the framework of general relativity to visualize a black hole as it would appear to an observer
- Programming of a portion of a physics engine for virtual reality

2020 (1 month) **Safran Aircraft Engines**
- Work experience in the casting-fusion department

Languages Skills and computer skills

Languages **French**: Mother tongue
English: Fluent, C2
Spanish: Intermediate, B1
Russian: Elementary - intermediate, A2-B1

Computer skills **Languages**: Python, C, C++
Tools: Latex, Git

Hobbies, associative life and other activities

Sports Cycling, Workout

Arts club In charge of the concert offer of the club and the ticketing of the art club of Mines Paris

Miscellaneous Tutoring of students in High-school/Preparatory classes