

**Marco Biroli**

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Born 16/01/2000

Italian & French



### ➤ STUDIES

- ❖ 2020/2021: International Center for Fundamental Physics Master 1 program at ENS.
- ❖ 2019/2020: L3 of Ecole Normale Supérieure, Majoring in Physics. Average in Physics: 15.5/20, Math/CS average: 19.5/20.
- ❖ 2018/2019: BoS of Ecole Polytechnique, 3, Majoring in Mathematics and Physics, GPA: 4.2/4.0. S4, GPA: 4.2/4.0.
- ❖ 2017/2018: BoS of Ecole Polytechnique, S1, GPA: 4.12/4.0. S2, GPA: 4.17/4.0
- ❖ 2014-2017: Ecole Active Bilingue Jeannine Manuel (Paris 15ème), Baccalauréat Spécialité Mathématiques Mention Très Bien.

### ➤ AWARDS

- ❖ Excellence Scholarship from the Ecole Polytechnique Foundation, 2018- 2020.
- ❖ Diploma of Bachelor of Ecole Polytechnique Summa Cum Laude.

### ➤ INTERNSHIPS

- ❖ 2020 (June - August) – A two months internship in the group of Werner Krauth at ENS on Event Chain Monte-Carlo (ECMC) algorithms. ECMC algorithms are state of the art methods for solving complex many-bodies interacting systems, during my internship I developed a generalization of such algorithms to non-spherical particles with solid boundary conditions. We are currently working on generalizing the algorithm to periodic boundary conditions. **Supervisor: Werner Krauth (CNRS Research Director, Prof CC at ENS).**
- ❖ 2019 (June 15 – Start of August) – One-and-a-half-month internship at CPHT (centre the physique théorique) on “Quantum localization transitions in quasi-periodic lattice systems” in collaboration with Alessandro Pocco. Topic: Critical and fractal properties of quantum particles in quasi-periodic potentials. Realization of numerical calculations, analysis of the data, critical discussion of the numerical results, and interpretation. **Supervisor: Laurent Sanchez-Palencia (CNRS Research Director and Prof CC at Ecole Polytechnique; Head of the Quantum Matter group at CPHT).**
- ❖ 2018 - Two months internship at LIX (Laboratoire Informatique de l'X) where I developed an algorithm for Path/Motion Planning that I had come up with during the year. I also started building a graphical interface that would regroup all well-known path/motion planning algorithms. We are currently drafting a research paper. **Supervisor: Adina Panchea, PhD at LIX (Laboratoire Informatique de l'X).**

### ➤ COMPUTER SKILLS

- ❖ Computer Languages:
  - Python (Excellent)
  - C++ (Good)
  - MATLAB (Good)
- ❖ Computer Software:
  - Mathematica, MATLAB, Simulink (&Stateflow), IDLE, Qt, LaTeX

### ➤ LANGUAGES

- ❖ French (Native language)
- ❖ Italian (Native language)
- ❖ English (Native language)
- ❖ Spanish (B2)

### ➤ EXTRA-CURRICULAR ACTIVITIES & COMPETITIONS

- ❖ Concours General de Physique-Chimie – 2017.
- ❖ Ranked 6<sup>th</sup> in the world with congratulations from the jury for my young age in the **Rover On Mars Challenge** from MATLAB & Simulink in 2015.
- ❖ Ranked 100<sup>th</sup> in the world in 2014 in the competition **Coders Strike Back from CodinGame**.
- ❖ Participated in the ENS team for the French Physicist's Tournament.
- ❖ Participated to the concours national universitaire d'escrime for the Ecole Polytechnique.