

# Matteo Cardi

## Curriculum Vitae



### Education

- 2022 – on **PhD in Physics**, *Università degli Studi di Genova*, Genoa, Italy  
going
- 2019 – 2021 **Master Degree in Physics**, *Università degli Studi di Genova*, Genoa, Italy
- **Master's Thesis:** "*Gravity as dynamics of three-dimensional geometries: general theory and solvable models*" under the supervision of **Prof. Nino Zanghì**
  - **Final Mark:** 110/110 cum laude
- 2016 – 2019 **Bachelor's Degree in Physics**, *Università degli Studi di Genova*, Genoa, Italy
- **Bachelor's Thesis:** "*Dynamical symmetries and the degeneration of the H atom*" under the supervision of **Prof. R. Mattera**
  - **Final Mark:** 99/110
- 2011 – 2016 **Scientific High School Diploma**, *Liceo Scientifico Don Bosco*, Alassio, Italy

### Professional interests

#### Geometrodynamics and Quantum mechanics/gravity interplay

My interests mainly concern mathematical features of gravity, using the so-called geometrodynamical formulation. During my master's thesis, I explored some features of the geometrodynamical framework applied to classical gravity. Presently, my research is centred on exploring the interplay between quantum mechanics and gravity. Specifically, I am investigating thermal effects within gravitational fields, with a particular focus on the Unruh and Hawking effects.

#### Computational Nuclear Physics

I am also interested in computational physics and its application to Nuclear Reactor Physics. At the end of June 2022, I attended the International Summer School on Engineering Computing in Nuclear Technology at MEPhI, which gave me the basic knowledge of one of the main codes for Nuclear Reactor Physics, the Monte Carlo Universal.

### Job experience

- 2023-2024 **General Physics 1 Tutor**, *Electrical & Chemical Engineering*, *Università degli Studi di Genova*, Genoa, Italy
- 2020-2021 **High school Tutor**, *Istituto Sant'Andrea*, Albenga, Italy

## Certificates

- **VII International Summer School on Engineering Computing in Nuclear Technology**, National Research Nuclear University MEPhI, Moscow, Russia
- **Basic FlowVision course**, VII International Summer School on ECINT, 2022

## Languages

- **Italian:** native
- **English:** fluent
- **French:** basic

## Computer Skills

### Languages:

- FORTRAN
- C++
- *Python*
- L<sup>A</sup>T<sub>E</sub>X

### Programs and codes:

- Monte Carlo Universal
- FlowVision
- Mathematica
- Matlab

## Other activities

### Speaker at:

- *La fisica di Interstellar* lecture, Don Bosco, Alassio (2019)
- *L'eredità di Chernobyl* lecture, Don Bosco, Alassio (2020)
- *Ambientalismo nucleare* lecture, Istituto tecnico tecnologico per elettronica e elettrotecnica Tommaso Doria, Cirié (2022)