FEDERICO ARMATO

Physicist

CONTACT

federico.armato@edu.unige.it
federico.armato@ge.infn.it

LANGUAGE SKILLS

Italian
(Native Speaker)

English (First Certificate in English)
LISTENING B2 READING B2
WRITING B2 SPEAKING B2

Spanish
LISTENING B2 READING B2
WRITING B1 SPEAKING B1

INFORMATIC SKILLS

Software
COMSOL Multiphysics

Programming
MATLAB
Python
C++

Computing Environments
Mathematica

PROFILE

I hold a background in physics with a primary focus on Field Theory and General Relativity, particularly in their applications to Cosmology and Gravitational Waves. As a current Ph.D. student, my primary research revolves around the development of a non-invasive monitoring system designed for real-time assessment of the charge deposited on the mirrors of the Virgo interferometer.
I am also engaged in the exploration of passive shielding techniques for the Einstein Telescope (ET), utilizing materials with high magnetic permeability and induced currents.
Additionally, I am actively contributing to the field of Effective Field Theory of Dark Energy, building upon the foundations laid during my master's thesis.

EDUCATION

Bachelor degree in physics [25/03/2021]
Physics department, University of Genova, Italy
Final grade: 110/110
Thesis: Path integrals in quantum physics

Master degree in physics [21/09/2022]
Physics department, University of Genova, Italy
Final grade: 110/100 cum laude
Thesis: Modified Gravity and Optimal Basis for Effective Field Theory of Dark Energy

24 CFU for Teaching [27/09/2022]
Psychology (6 CFU)
Pedagogy (6 CFU)
Anthropology (6 CFU)
Teaching methodologies and technologies (6 CFU)

Doctorate in Physics and Nanosciences [current]
Physics department, University of Genova, Italy

Measuring Gravity SIGRAV International School 2024 [Feb 2024]
Vietri sul mare, Salerno, Italy

TEACHING

- **General Physics Teaching Tutor** [2023 - 2024]
  Physics department, University of Genova, Italy

- **Mathematics Teaching Tutor** [2023 - 2024]
  Geology department, University of Genova, Italy

CONFERENCE PRESENTATIONS

- **XIII ET Symposium** [May 2023 - presentation]
  Passive magnetic shielding for test-mass towers

- **XIII ET Symposium** [May 2023 - poster]
  Charge Monitoring on Mirrors

- **XIII ET Symposium** [May 2023 - poster]
  Mitigation of Low-Frequency Magnetic Fields

- **16th Pisa Meeting on Advanced Detectors** [May 2024 - poster]
  Charge Monitoring of Test Masses in Gravitational Waves Interferometers

PUBLICATIONS

- **Future gravitational wave detectors: Phase noise investigation and magnetic noise mitigation strategies**
  https://doi.org/10.1016/j.nima.2024.169629

- **Observation of Gravitational Waves from the Coalescence of a 2.5–4.5Me Compact Object and a Neutron Star**
  https://iopscience.iop.org/article/10.3847/2041-8213/ad5beb

SCIENCE OUTREACH

- **FameLab** [May 2024]
  Genova, Liguria, Italy