Livia Petrillo

Curriculum Vitae
Ai fini della pubblicazione

Data 22/12/2025

F.to Livia Petrillo

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EDUCATION & TRAINING

01/11/2025 - CURRENT Rome, Italy

PhD Student in Physics Sapienza University of Rome

Admitted as **first-ranked candidate** in the PhD admission competition.
Supervisor: Prof. Fabio Bellini

- **Research activity**: particle physics, experimental. Detector development and data analysis for rare-event searches within the CUPID experiment at Gran Sasso National Laboratories

01/11/2023 - 27/10/2025 Rome, Italy

Master's Degree in Physics Sapienza University of Rome

- **Curriculum**: *Fundamental Interactions: Theory and Experiment*
- **Relevant Coursework**: Particle physics, Neutrinos and dark matter, Methods in experimental particle physics, Object oriented programming for data processing, Physics laboratory, Phenomenology of the Standard Model

Final grade: 110/110 cum laude | **Thesis:** "Search for Axion Signatures with CUPID-0", advisor: Prof. Fabio Bellini

01/11/2020 - 14/12/2023 Rome, Italy

Bachelor's Degree in Physics Università La Sapienza di Roma

- **Relevant Coursework**: Nuclear and subnuclear physics, Astrophysics, Computational physics, Laboratory of signals and systems, Mathematical models and methods of physics, Quantum mechanics, Astrophysics

Final grade: 110/110 cum laude | **Thesis:** "Direct detection of Dark Matter and the SABRE experiment", advisor: Prof. Daniele del Re

CONFERENCES & SEMINARS

30/09/2025 - 03/10/2025 L'Aquila, Italy

Gran Sasso Science Institute – 14th Young Researcher Meeting

Talk title: Axion searches with the CUPID-0 detector

22/09/2025 - 26/09/2025 Palermo, Italy

Società Italiana di Fisica – 111th National Congress

Talk title: Axion searches with the CUPID-0 detector

SKILLS

C | C++ | Python | Root | VSCode, Jupyter | Geant4 - Advanced Simulation toolkit

LANGUAGE SKILLS

MOTHER TONGUE(S): Italian
OTHER LANGUAGE(S):

Inglese

Listening C2	**Spoken production** C2
Reading C2	**Spoken interaction** C2

SCHOLARSHIPS AND AWARDS

01/04/2025 - 30/09/2025

INFN Scholarship for Master's Thesis students in Experimental Physics

- Fellowships for **Master's Degree students in Experimental Physics** themes of INFN interest in one of the following fields: Subnuclear Physics, Astroparticle Physics, Nuclear Physics, Technological Research.
- Awarded to **5 top finalists** in a competitive call to support master's-thesis research in Subnuclear, Astroparticle, Nuclear or Technological Physics.

01/10/2024 - 30/09/2025

"Più Donne nella Fisica"

Renewal for the second year of Master's Degree.

01/10/2023 - 30/09/2024

"Più Donne nella Fisica"

Project aimed at promoting female participation in the study of Physics, through a qualifications-based competition for the awarding of **25 scholarships in Italy** to female students enrolled in the Master's degree program in Physics or in Astrophysical Sciences for the academic year 2023/2024.

AFFILIATIONS

Gran Sasso National Laboratories (LNGS)

Nuclear Physics National Institute (INFN), Roma 1

RESEARCH EXPERIENCE

01/03/2025 - Current

CUPID Research Group, Sapienza University, Rome & LNGS

- Data processing with **ROOT**
- MC simulations processing
- Tools and languages used: **ROOT, C++, Python**

01/03/2024 - 30/09/2024

Laboratory project on MicroMegas detectors, LNF (Laboratori Nazionali di Frascati), Frascati

- Characterization of two **Micromegas detectors** via cosmic-ray and beam test measurements
- Management and diagnostics of HV on 40 channels
- Analysis of efficiency, drift velocity and signal centroids, and reconstruction of tracks to assess angular alignment from time-resolved clusters
- Tools used: **ROOT, Python, GECO, Grafana**

01/05/2024 - 30/06/2024

GEANT4 simulation: 662 keV photons through a polystyrene block

- Implementation of the **GEANT4 code**
- Analysis of the resulting spectra of the deposited energy in the calorimeter, with particular interest in the reconstruction of the Compton edge
- Study of different physics lists and geometries
- Tools used: **GEANT4, Python**

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