europass

Vito Monno

EDUCATION AND TRAINING

Master's degree in Physics

Università la Sapienza di Roma [09/2023 – 10/2025]

City: Roma | **Country:** Italy | **Final grade:** 110/110 cum laude | **Thesis:** "Trigger and Data Acquisition Development in CYGNO and Preliminary Studies of Nuclear Recoil Backgrounds for Dark Matter Detection". Developed and commissioned an upgraded DAQ system for the CYGNO experiment through hardware integration and software development (C++/ROOT, MIDAS), enabling continuous CMOS imaging and synchronized multi-camera acquisition; performed a preliminary analysis of underground data to investigate nuclear-recoil backgrounds from radon progeny.

Relevant Coursework: Neutrinos and Dark Matter, Object Oriented Programming for Data Processing, Methods in experimental particle physics, Physics laboratory I and II, Particle physics, Phenomenology of the standard model.

Bachelor's degree in Physics

Università la Sapienza di Roma [09/2020 – 12/2023]

City: Roma | **Country:** Italy | **Final grade:** 110/110 cum laude | **Thesis:** "Energetic Ion Interaction with Matter". Developed a Monte Carlo simulation to model the energy loss and deflection of energetic ions traversing a gas, computing stopping power and projected range. The work combines analytical treatment of Coulomb scattering with large-scale numerical simulation.

Relevant Coursework: Nuclear and subnuclear physics I, Laboratory of computational physics I, Laboratory of signals and sistems, mathematical models and methods of physics, Structure of matter, Quantum mechanics.

GRADUATE PROJECTS

[03/2025 – Current]

CYGNO Research Group Involvement

Rome, IT & LNGS (Laboratori Nazionali del Gran Sasso), IT

- Contributed to the hardware upgrade of the CYGNO DAQ for continuous CMOS imaging and synchronized multi-camera acquisition, including on-site activities at LNGS.
- Conducting systematic performance tests on the MANGO detector to optimize DAQ features and readout parameters
- Presenting progress and results at weekly CYGNO collaboration meetings
- Tools used: MIDAS, C++, Python, Git.

[03/2024 – 09/2024]

Laboratory Project on Micromegas Detectors

LNF (Laboratori Nazionali di Frascati), IT

- Characterized two Micromegas detectors via cosmic-ray and test-beam measurements.
- Managed HV on 40 channels and performed diagnostics (curing, offset).
- Analyzed efficiency, drift velocity, and signal centroids, and reconstructed tracks to assess angular alignment from time-resolved clusters.
- Tools used: ROOT, Python, GECO, Grafana.

SCIENTIFIC ASSOCIATIONS

[03/2025 – Current]
CYGNO Research Group

Rome, IT & LNGS (Laboratori Nazionali del Gran Sasso), IT

[03/2025 – Current]
Associate at INFN (Istituto Nazionale di Fisica Nucleare)

[03/2025 – Current]
Associate at LNGS (Laboratori Nazionali del Gran Sasso)

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Programming

Python / C/C++ / Bash / LateX

Data Analysis

SciPy / Pandas / NumPy / ROOT / Matplotlib

Tools & Software

MIDAS / Git / Linux / Github / Jupyter Notebooks