

PERSONAL INFORMATION **Flaminia Quattrini**

EDUCATION

2022–2024 Master of Science in Particle and Astroparticle Physics (110/110)

Sapienza University of Rome, Italy

- Main subjects
- Particle Physics;
 - Nuclear Physics;
 - Particle detectors;
 - Medical Applications of Physics;
 - Computing methods for Physics (C, C++, Python);

Thesis title *Characterization of innovative high-Z organic scintillators for a modern SPECT detection system: the reSPECT project*

Thesis advisors Dr. Giacomo Traini, Dr. Michela Marafini

2018–2021 Bachelor of Science in Physics (110/110)

Sapienza University of Rome, Italy

- Main subjects
- Classical and Modern Physics;
 - Experimental Physics and Laboratory Activities;
 - Statistics and Data Analysis;
 - Mathematical Methods for Physics;
 - Computing Methods for Physics;

Thesis title *La violazione della simmetria CP nelle interazioni deboli (CP-symmetry violation in weak interactions)*

Thesis advisor Prof. Shahram Rahatlou

EXPERIENCE

Sep 2023 – Mar 2024 Thesis Internship

Sapienza University of Rome, Department of Basic and Applied Sciences for Engineering

I carried out research activities within the Applied Radiation Physics Group (ARPG).

The goal of my work was measuring the performances of innovative gamma ray detectors, based on high-Z doped organic scintillators, to be exploited in the field of medical imaging (*reSPECT project*). In this context, I had the opportunity to participate in the research activities of a professional laboratory.

- I developed an experimental setup based on the data acquisition system WaveDAQ, different readout devices (Photomultiplier Tubes and Silicon Photomultipliers) and particle detectors (organic and inorganic scintillators).
- I carried out the data acquisition and the data analysis (performed with the software ROOT developed by CERN).
- I simulated the radiation-matter interactions involved in the experiment by exploiting the software FLUKA.

I participated to the realization of a fluorescence-based beam monitor suitable for FLASH radiotherapy treatments (*FLASH-DC project*). In this context, in November I took part to the testing procedures at the Beam Test Facility (BTF) located at the National Laboratory of Frascati (LNF), the largest laboratory of the National Institute for Nuclear Physics (INFN).

PARTICIPATION TO CONFERENCES

Workshop **Status e Prospettive della Radiobiologia in Italia (Status and Perspectives of Radiobiology in Italy)**

Italian Society for Research on Radiations (S.I.R.R.)

29-30 November 2023, Rome, Italy

Title of the presentation *Characterization of innovative organic scintillators for a modern SPECT detection system*

Workshop **ShareScience: Multidisciplina e Trasferimento Tecnologico (ShareScience: Multidiscipline and Technology Transfer)**

Faculty of Sciences and Engineering, Sapienza University of Rome

15-16 February 2024, Rome, Italy

Title of the presentation *Innovative SPECT detection system based on high-Z plastic scintillators: the reSPECT project*

AWARDS AND ACHIEVEMENTS

Premio "Alfieri del Lavoro"

Federazione Nazionale dei Cavalieri del Lavoro

8 November 2018, Rome, Italy

Prize awarded by Presidente della Repubblica to the 25 best italian high school students.

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B2	B2	C1

Programming languages and computer tools

- C, C++ and Python for scientific programming
- R and ROOT for data analysis
- LaTeX, Emacs and Microsoft Word for writing

Other skills

Teamwork, organization, problem solving, adaptability.

Driving licence

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