

Lavinia Paiella

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Research interests

I am strongly interested in **compact objects** and their **multi-messenger** emissions. I am currently investigating the role of **star clusters** in nurturing the growth of **heavy intermediate mass black holes** using semi-analytic **population synthesis codes**.

Education

Ph.D. program

Astroparticle Physics

Supervisors: Prof. Manuel Arca Sedda, Prof. Gor Oganessian

key words: intermediate mass black holes, star clusters, population III stars , population synthesis

Gran Sasso Science Institute

Nov 2022 - Present

Master degree

Astrophysics, 110/110 w.h.

key words: neutron star binaries, gravitational waves, kilonovae

La Sapienza University

Sep 2020 - Sep 2022

Bachelor Degree

Physics, 110/110 w.h.

key words: machine learning, galaxy surveys

La Sapienza University

Sep 2017 - Sep 2020

Awards and Honours

Transnational Visitor Programme Grant

Awarded by AHEAD2020, ~ 2.5k euros

April 2024

Grant for short-term visitor programmes aimed at the realization of projects in high energy astrophysics.

Milla Baldo Ceolin National Prize

Awarded by INFN, ~ 1k euros

July 2023

National award for the 10 best master theses in Theoretical Physics written by women.

Scientific visits

Short term stay (AHEAD2020 programme)

Barcelona , Spain

Project on the formation of black hole - neutron star binaries and their potential as gamma-ray bursts progenitors. Supervision of Dr. Sara Rastello and Prof. Mark Gieles.

ICCUB

22 Sept - 13 Oct 2024

Short term stay

Baltimore , USA

Hosted by Prof. Emanuele Berti's research group in the context of ITA-USA Bilateral Agreement between GSSI and Johns Hopkins University.

Johns Hopkins University

25 Oct - 23 Nov 2023

Publications

[1]: Cozzumbo, A., Mestichelli, B., Mirabile, M., **Paiella, L.**, Tissino, J., and Harms, J., "Opportunities and limits of lunar gravitational-wave detection", arXiv e-prints, 2023.
DOI: 10.48550/arXiv.2309.15160.

Conferences & Workshops

Seminars.....

APC seminars 2024/2025 <i>Trieste, Italy</i>	SISSA 19 March 2025
Pizza Seminars 2024/2025 <i>Barcelona, Spain</i>	ICE - CSIC 11 Oct 2024

Contributed talks.....

EAS 2025 <i>Cork, Ireland</i>	University College Cork 23-27 June 2025
MODEST 2025 <i>Seoul, South Korea</i>	Seoul National University 16-20 June 2025
ET Symposium 2025 <i>Bologna, Italy</i>	CNR center 26-30 May 2025
Unveiling massive black hole evolution with gravitational waves and light <i>Paris, France</i>	APC Paris 19-23 May 2025
Challenges and future perspectives in GW astronomy <i>Leiden, Netherlands</i>	Lorentz center 14 -18 Oct 2024
MODEST 2024 <i>Warsaw, Poland</i>	Nicolaus Copernicus Astronomical Center 19 -23 Aug 2024

Posters.....

EAS 2024 <i>Padova, Italy</i>	Padova Congress 1-5 Jul 2024
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Work Experience

Outreach experience.....

Space Explorers <i>L'Aquila, Italy</i> Outreach event organized by the Astrophysics and Cosmology Group of Gran Sasso Science Institute for elementary schools in L'Aquila.	Gran Sasso Science Institute 2023 - Present
European Researchers' Night <i>L'Aquila, Italy</i> Volunteered at the activities organized by Gran Sasso Science Institute.	Gran Sasso Science Institute 29-30 Sep 2023

Technical skills

Programming: Python (advanced),
C/C++ (intermediate),
Mathematica, Fortran (beginner)

O.S.: Linux, Windows (advanced)

Other: \LaTeX , Office (advanced),
Matlab (beginner)

Languages

Italian: Native

English: Proficient

IELTS Certificate, average score: 8 (January 2022)