ABOUT MYSELF

Profile

• Currently I'm a postdoctoral researcher at the Urbino University, Department of Pure and Applied Sciences (DISPeA). The topic of my research is the development of the OctoPyUs software, used to simulate the transfer function of complex objects such as seismic isolation systems of gravitational wave detectors. application. I also develop and test algorithms for adaptive and fractal time series analysis for Virgo detector characterization purposes.

Background

• My background is Applied Physics, numerical modelling and adaptive and fractal time series analysis. Since April 2018, as a member of the Virgo-LIGO collaboration my task is to develop tools for detector characterization. I've developed and applied a tool for scattered light noise mitigation in Virgo-LIGO data. In this regard, I conceptualised and setup a scattering daily monitoring system which is being used during O4. As part of the MAGIC collaboration i contribute to the activities of the atmospheric characterisation group through applied data analysis. During my PhD I've worked with radionuclides and meteorological datasets acquired by the CTBTO-IMS, United Nations (Vienna).

Education and Research Activity

- Postdoctoral Researcher in Physics, DISPeA (2022-2024).
- Postdoctoral Researcher in Physics, INFN Roma Tre (2020-2022).
- PhD in Physics, Roma Tre University (cum laude)
- MSc Physics, Roma Tre University (110/110)
- BSc in Physics, Roma Tre University, (100/110)

Technical skills

• MATLAB, Python, PyVharm, Condor, Slurm, keras, tensorflow, Gitlab, LaTeX, Grammarly

- Language skills
 - Italian: native speaker
 - English: professional
 - German: beginner

Scientific production to date

- Fourteen papers have been published on peer review journals
- As part of the PWT I contributed through conceptualization, software development, data analysis, writing, editing and proofreading of three collaboration papers:

- <u>Acernese F. et al., "Virgo detector characterization and data quality: results from the O3 run." Classical and</u> <u>Quantum Gravity 40.18 (2023): 185006.</u> -

- <u>Acernese F. et al., "The Virgo O3 run and the impact of the environment." Classical and quantum gravity 39.23</u> (2022): 235009. -

- <u>Acernese F. et al., "Virgo detector characterisation and data quality: tools." Classical and Quantum Gravity 40.18</u> (2023): 185005.

- <u>Coauthor of LVK collaboration papers</u>
- Proceedings of the Dagstuhl Seminar 19282 on Data Series Management.
- Proceedings of the EPS Conference on High Energy Physics
- <u>Contribution American Physical Society international conference</u>
- <u>Contribution to the AtmoHEAD 2024 international conference</u>

Teaching

- <u>Applied Physics Course, PhD in Physics 2020-2021. Department of Mathematics and Physics, Roma Tre</u> <u>University. Course title: Adaptive and Fractal Data Analysis</u>
- Research Assistant in the exam committee of Courses at the Department of Mathematics and Physics, Roma Tre University (2021-2024)

Advisor of Master Thesis in Physics

• Thesis Title: Adaptive Time Series Analysis for worldwide beryllium-7 in Earth Atmosphere