

🎓 EDUCATION

- **Università degli Studi di Padova, INFN Sezione di Padova** Padova, Italy
Ph.D. in Physics, cum laude Oct 2017 – Sep 2020
- **Università degli Studi di Padova** Padova, Italy
Master of Physics. 110/110 cum laude Oct 2015 – Jul 2017
- **Università degli Studi di Padova** Padova, Italy
Bachelor of Physics. 104/110 Oct 2012 – Sep 2015

💼 EXPERIENCE

- **TU München & INFN Padova** München, DE
Post-doc fellow at TUM & Associated visitor at INFN Nov 2020 – Present
 - **Liquid argon detector instrumentation:** Development of the software routines for analyzing SiPM detector data in the context of the LEGEND-200 experiment.
 - **HPGe detector characterization:** Modeling and *in-situ* characterization of the GERDA HPGe detectors active volume with low-energy ^{39}Ar events recorded by the experiment.
 - **LEGEND background modeling:** Development of the LEGEND-1000 background model for the DOE project proposal.
- **University of Padova & INFN Padova** Padova, IT
Ph.D. student Oct 2017 – Oct 2020
 - **Background modeling and new $\beta\beta$ physics searches:** A predictive background model is essential when searching for rare events. In GERDA, the event energy spectrum is fitted to a mixture of simulated background and signal shapes, in order to constrain the presence of new physics phenomena on the top of the $2\nu\beta\beta$ decay spectrum.
 - **Liquid argon detector modeling:** The GERDA experiment achieves an outstanding background suppression efficiency by exploiting the scintillation properties of liquid argon, in which the germanium detectors are submerged. A part of the background model is devoted to reproduce the observed event suppression with Monte Carlo simulations.
 - **The MAGE simulation toolkit:** Development of MAGE, a GEANT4-based software framework to simulate background and signal events in various $\beta\beta$ -decay-related experimental setups, including GERDA, MAJORANA and LEGEND.
 - **HPGe detector modeling and characterization:** Development of the data acquisition software suite used in the characterization campaign of the new point-type inverted-coaxial germanium detectors used in LEGEND.

📄 PUBLICATIONS

- [1] N. Abgrall et al. “The Large Enriched Germanium Experiment for Neutrinoless $\beta\beta$ Decay: LEGEND-1000 Preconceptual Design Report” (2021). arXiv: 2107.11462 [physics.ins-det]
- [2] M. Agostini et al. “Calibration of the Gerda experiment”. *Eur. Phys. J. C* 81.8 (2021), p. 682. DOI: 10.1140/epjc/s10052-021-09403-2. arXiv: 2103.13777 [physics.ins-det]
- [3] M. Agostini et al. “Characterization of inverted coaxial ^{76}Ge detectors in GERDA for future double- β decay experiments”. *Eur. Phys. J. C* 81 (2021), p. 505. DOI: 10.1140/epjc/s10052-021-09184-8. arXiv: 2103.15111 [physics.ins-det]
- [4] M. Agostini et al. “Final Results of GERDA on the Search for Neutrinoless Double- β Decay”. *Phys. Rev. Lett.* 125.25 (2020), p. 252502. DOI: 10.1103/PhysRevLett.125.252502. arXiv: 2009.06079 [nucl-ex]

- [5] M. Agostini et al. “Modeling of GERDA Phase II data”. *JHEP* 03 (2020), p. 139. DOI: 10.1007/JHEP03(2020)139. arXiv: 1909.02522 [nucl-ex]
- [6] M. Agostini et al. “The first search for bosonic super-WIMPs with masses up to $1 \text{ MeV}/c^2$ with GERDA”. *Phys. Rev. Lett.* 125.1 (2020), p. 011801. DOI: 10.1103/PhysRevLett.125.011801. arXiv: 2005.14184 [hep-ex]
- [7] M. Agostini et al. “Probing Majorana neutrinos with double- β decay”. *Science* 365 (2019), p. 1445. DOI: 10.1126/science.aav8613. arXiv: 1909.02726 [hep-ex]
- [8] M. Agostini et al. “GERDA results and the future perspectives for the neutrinoless double beta decay search using ^{76}Ge ”. *Int. J. Mod. Phys. A* 33.09 (2018), p. 1843004. DOI: 10.1142/S0217751X18430042
- [9] M. Agostini et al. “Improved Limit on Neutrinoless Double- β Decay of ^{76}Ge from GERDA Phase II”. *Phys. Rev. Lett.* 120.13 (2018), p. 132503. DOI: 10.1103/PhysRevLett.120.132503. arXiv: 1803.11100 [nucl-ex]

LINKS

- Personal portfolio: gipert.github.io
- ORCID ID: orcid.org/0000-0002-0467-2571
- INSPIRE-HEP: inspirehep.net/authors/1667599

SEPTEMBER 2021

