

🎓 EDUCATION

- **Università degli Studi di Padova, INFN Sezione di Padova** Padova, Italy
Ph.D in Physics candidate *Oct 2017 – Present*
- **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*

🎓 SCHOOLS AND WORKSHOPS

- **19th JINR-ISU Baikal Summer School on Physics** Bolshie Koty, Lake Baikal, Russia
🔗 <https://astronu.jinr.ru/school/current> *12 – 19 Jul 2019*
- **CERN School of Computing** Tel Aviv, Israel
🔗 <https://indico.cern.ch/event/681081> *1 – 14 Oct 2018*
- **11th Neutrino Summer School** Mainz, Germany
🔗 <http://inss2018.uni-mainz.de> *21 May – 1 Jun 2018*
- **INFN School of Statistics** Ischia, Italy
🔗 <https://agenda.infn.it/event/infostat-2017> *7 – 11 May 2017*
- **8th INFN International School on efficient large scale scientific computing** Ce.U.B. Bertinoro, Italy
🔗 <https://web.infn.it/esc16> *24 – 29 Oct 2016*

🎓 EXPERIENCE

- **GERDA** Dipartimento di Fisica e Astronomia “G. Galilei”, Padova
Simulation and background studies — task group leader *Oct 2017 – Present*
 - **Background model:** 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 in data [JHEP 03 (2020), 139].
 - **Liquid Argon veto:** The GERDA experiment achieves a leading 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 event suppression seen in data with Monte Carlo simulations.
 - **The MAGE simulation toolkit:** MAGE is a GEANT4 application developed in collaboration with the MAJORANA DEMONSTRATOR experiment to simulate background and signal events in various experimental setups, including GERDA, MAJORANA and LEGEND.
- **LEGEND** Dipartimento di Fisica e Astronomia “G. Galilei”, Padova
Oct 2017 – Present
 - **HPGe detector characterization:** Development of the data acquisition software suite used in the characterization campaign of the new point-type inverted-coaxial germanium detectors that will be deployed in LEGEND.

PUBLICATIONS

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

LINKS

- Personal portfolio: www.pd.infn.it/~pertoldi
- ORCID ID: orcid.org/0000-0002-0467-2571
- GitHub profile: github.com/gipert

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