



Marco Pallavicini

Full professor

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Education and training

1995

PhD Physics

Un esperimento di stati del charmonio in annichilazione anti-protone
protone - Maximum grade

Università di Genova - Genova - IT

Academic experience

2015 - ONGOING

Full professor in Physics

Università di Genova - Genova - IT

Teaching. Research. Science dissemination and popularisation.

Language skills

Italian

Mother tongue

English

Proficient

French

Basic

Teaching activity

I have been teaching since 2002 at the Scuola di Scienze and at the Scuola Politecnica offering the following courses:

- Object Oriented Programming for physics applications; 2002-2005;

Dipartimento di Fisica

- General Physics; 2005-today (Ingegneria Meccanica, Ingegneria Elettronica and Fisica)

- Introduction to Astrophysics and Cosmology; 2009-today; Laurea magistrale in Fisica

Besides, I have been teaching at the Graduate School on Particle Physics, Astroparticle Physics and Neutrino Physics.

Postgraduate research and teaching activity

Supervision of PhD students, residents and post-doctoral fellows

I teach each year at the Graduate School in Physics

I am and have often been supervisor of undergraduate and graduate thesis

on topics connected to my research activities. I am also supervisor of post-docs connected to activities at the Department of Physics and at the Istituto Nazionale di Fisica Nucleare (INFN)

PhD committees membership

I am member of the PhD School in Physics in Genova

Postgraduate (PhD) teaching activity

I teach and have taught on courses about:

- particle physics
- astroparticle physics
- neutrino physics

Research interests

1990-2003 Charm quark physics and charmonium physics at Fermilab in experiments E760 and E835. Main achieved goals: precision measurement of masses and widths of charmonium states and discovery of 1P1 state.

1994-1999 Beauty quark physics and CP violation in B meson sector.

Experiment BaBar. Main achieved goals: discovery of CP violation in B meson sector.

1999-now: Solar and geoneutrino physics with Borexino. Main achieved goals: construction of the whole electronics and control system of the experiment. High precision measurement of pp chain solar neutrino components. First observation of Be7 and pep neutrinos. First clear observation of geoneutrinos. I have been the chairman of the steering committee for 7 years and I have been the co-spokeperson since 2011.

1999-2004: Cosmic rays physics from space Project EUSO. The project was finally not financed by ESA. Main achieved goals: development of a full simulation program that is still used within the cosmic rays community (ESAF).

2003-now: Search of neutrinoless double beta decay with CUORE at Gran Sasso. Main achieved goals: construction of a low radioactivity cryogenic suspension. The experiment has started data taking in 2016 and it is now running.

2012-now: DarkSide project for the search of dark matter at Gran Sasso. The detector is under design and construction. Main achieved goals: the 50 kg prototype is running well and has given very encouraging results.

2013-2018: Search of sterile neutrinos with the ERC Advanced funded project SOX.

In the future, I plan to continue my research on the dark side of the universe: neutrino physics, dark matter and dark energy. I am starting two long term activities, one on neutrino physics in the USA (DUNE project) and one in the context of the EUCLID mission (funded by ESA).

Grants

2005 - ONGOING

Borexino

INFN - IT

2.100.000 - Pricipal investigator

Borexino is an experiment for the study of low energy solar neutrinos based on an ultrapure liquid scintillator detector. It has been running since 2007 at Gran Sasso and it has obtained very relevant results measuring precisely all components of the solar pp chain.

Fundings have been used for the design, construction and maintainance of the electronics and control system of the experiment.

2005 - 2014

CUORE

INFN - IT

850.000 - Pricipal investigator

CUORE is an experiment at the Laboratori Nazionali del Gran Sasso for the search of neutrinoless double beta decay, a very rare nuclear process whose existing would give important information of rhe nature of neutrinos and their mass.

2013 - 2018

SOX

ERC

3.451.600 - Pricipal investigator

Project ERC Advanced for the search of sterile neutrinos by means of Borexino. Project completed in 2018.

2008 - 2011

Scintillatori Liquidi

MIUR PRIN 2007 - IT

Pricipal investigator

PRIN project for R&D on liquid scintillators connected to radiopurity studies in Borexino.