

Rosa Poggiani

Curriculum Vitae

Personal Information

Full name: Rosa Poggiani

Citizenship: Italian

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Education

1992: Doctor of Philosophy in Physics, *A contribution to the study of a measurement of the gravitational acceleration of antimatter*, University of Pisa, Advisor ██████████

1988: Laurea (Degree) in Physics, *Measurement of the gravitational acceleration of antiproton: theoretical aspects and detection problems*, University of Pisa, Advisor ██████████

Career History

Since December 2018: Associate Professor in Experimental Physics of Fundamental Interactions, Settore Concorsuale 02/A1, Settore Scientifico Disciplinare FIS/01

November 2014: Habilitation as Full Professor in Experimental Physics of Fundamental Interactions (Abilitazione Scientifica Nazionale a Professore di I Fascia per il Settore Concorsuale 02/A1)

January 2014: Habilitation as Associate Professor in Experimental Physics of Fundamental Interactions (Abilitazione Scientifica Nazionale a Professore di II Fascia per il Settore Concorsuale 02/A1)

Since 1995: Researcher (Ricercatrice) in Experimental Physics, tenured since 1998, Physics Department, University of Pisa

January 1995-February 1995: Research Contract, Consorzio Pisa Ricerche, Pisa

April 1994-December 1994: Research Contract, Department of Physics, University of Pisa

April 1993-April 1994: Post-doctoral Fellowship, Istituto Nazionale di Fisica Nucleare (INFN), Pisa

April 1992-April 1993: Post-doctoral Fellowship, Istituto Nazionale di Fisica Nucleare (INFN), Pisa

May 1988-October 1988: Research Contract, Department of Physics, University of Pisa

Research Interests

- Experimental physics of fundamental interactions
- Interferometric detection of gravitational waves
- Strong gravity sources
- Astroparticle physics
- Observational astrophysics

Research Experience

- Author or co-author of more than 290 papers in refereed journals, among them 16 as single author, two as corresponding author, with an h-index of 78 (Scopus, September 2021)
- Single author of an invited refereed review about gravitational wave detectors (2001)
- Single author of the book *Optical, Infrared and Radio Astronomy - From Techniques to Observation*, Springer, 2017
- Single author of the book *High Energy Astrophysical Techniques*, Springer, 2017
- Member of the P118T experiment at CERN for the measurement of the gravitational acceleration of antiproton, using the anticyclotron as deceleration device (1990-1991)
- Past member of ATHENA Collaboration for antihydrogen production
- Member of Virgo/Advanced Virgo Collaboration (since 1993) and of the LIGO-Virgo Collaboration (LVC) for the interferometric detection of gravitational waves
- Investigator of observing project at Hubble Space Telescope, *Accreting white dwarfs as probes of compact binary evolution*, *HST Proposal 16659*, Cycle 29, 132 planned external orbits
- Observational astronomer in the optical domain as Principal Investigator of observation proposals, targeted to transients, high energy sources, possible gravitational wave sources, at the Loiano Observatory Telescope (1.52 m diameter), Italy, since 2005
- CoInvestigator of ADTS-08 project for high resolution X-ray spectroscopy of novae in outburst (ASI/INAF/INFN Call)

Research Awards

May 2016: Special Breakthrough Prize in Fundamental Physics, awarded to all members of the LIGO-Virgo Collaboration of the discovery of gravitational waves

May 2016: 2016 Gruber Cosmology Prize, awarded to all members of the LIGO-Virgo Collaboration for the discovery of gravitational waves

Professional Associations

Associated to Istituto Nazionale di Fisica Nucleare (INFN) since 1995. Past association to CERN

Responsibility Roles

- Coordinator of the control and DAQ system of the P118T experiment at CERN for antiproton deceleration and trapping (1990-1991)
- Principal Investigator of the R&D of the last stage of the Virgo interferometer suspensions (1993-1995)
- Principal Investigator of the ultra high vacuum compatibility of the components of the suspensions of the Virgo interferometer (1995-2000)
- Member of the LVC Stochastic Review Committee of the LIGO-Virgo Collaboration for the review of the papers and software related to the search of the stochastic background of gravitational waves (since 2017)
- Member of LVC LIGO-skymap Review Committee for the review of the software related to the localization of gravitational events (since 2020)

- Principal Investigator of different research projects in observational astrophysics since 2005, with more than fifty observation proposals accepted at the Cassini Telescope, Loiano Observatory (1.52 m diameter); more than seventy nights as visitor, additional observing time in service mode

Reviewing Activity

Referee for Classical and Quantum Gravity, Journal of Physics B, Publications of the Astronomical Society of Japan, Acta Polytechnica, PoS Proceedings of Science, Astrophysical Journal, Mathematical and Computational Applications, Frontiers in Astronomy and Space Sciences, European Physical Journal Plus

Research Evaluation

- Member of *Albo dei Revisori MIUR* (Panel of referees for Italian Ministry of Instruction, University and Research, MIUR)
- Referee of research projects for the following Calls by the Italian Ministry of Instruction, University and Research (MIUR): PRIN 2012; Futuro in Ricerca 2013; FARE 2018; Rita Levi Montalcini 2018

Membership of Editorial Boards

- Associate Editor for High-Energy and Astroparticle Physics for the journals *Frontiers in Astronomy and Space Sciences* and *Frontiers in Physics*
- Member of Editorial Board of the journal *Universe*
- Guest Editor, with Ignazio Bombaci, of Special Issue *Neutron Stars and Gravitational Wave Observations*, for the journal *Universe* (presently open for submission)

Membership of Selection Committees

- INFN Pisa, Selection 9655/02 for a VI level technical position (C.T.E.R.)
- University of Pisa, Selection for an EP type position, Department of Physics (cod. EPTECd)
- University of Pisa, entrance examination for SSIS (Specialization School for the preparation of high school teachers), Academic Year 2000-2001
- University of Pisa, entrance examination for SSIS (Specialization School for the preparation of high school teachers), Academic Year 2001-2002
- University of Siena, Fixed Term Research Position, Physical Sciences, 2008, D. R. N. 727
- University of Siena, Fixed Term Research Position, Junior, SSD FIS/01, SC 02/A1, 2012, D. R. Rep. 1017/2012
- University of Pisa, Scholarship, Department of Physics, 2016, Prot. 1284 - 1/7/2016

Conference Presentations

- Talk, *Preliminary results on the anticyclotron at LEAR*, Workshop on Nucleon-AntiNucleon Interactions (NAN-91), Moscow, USSR, 1991, July 8-11
- Poster, *A possible gravity measurement with antihydrogen*, Antihydrogen Workshop, Ludwig Maximilian University, Munich, Germany, 1992, 30-31 July

- Talk, *Il sistema di sospensione degli specchi di Virgo*, Società Italiana di Fisica, LXXX Congresso Nazionale, Lecce, Italy, 1994, 26 September-1 October
- Talk, *Measurement of the gravitational acceleration of antihydrogen*, International Workshop on Antimatter Gravity and Antihydrogen Spectroscopy, Sepino, Italy, 1996, 19-25 May
- Talk, *Contamination problems in Laser Interferometric, Gravitational Wave Detectors*, XIV Congresso dell'Associazione Italiana del Vuoto, Vicenza, Italy, 1998, 5-8 May
- Invited talk, *Post outburst spectroscopy of novae*, The Golden Age of Cataclysmic Variables and Related Objects, Palermo, Italy, 2011, 12-17 September
- Invited talk, *The nova V5584 Sgr: a short review*, The Golden Age of Cataclysmic Variables and Related Objects II, Palermo, Italy, 2013, 9-14 September
- Poster, *A systematic search for periodicities of X-ray binaries in the Swift BAT data*, Swift: 10 Years of Discovery, La Sapienza University, Rome, Italy, 2014, 2-5 December
- Invited talk, *The transient OT J213806.6+261957 in Pegasus - Possible emitter of gravitational waves*, The Golden Age of Cataclysmic Variables and Related Objects - III, Palermo, Italy, 2015, 7-12 September
- Invited talk, *The importance of transient X-ray sources for GW physics*, Frontier Research in Astrophysics - II, Palermo, Italy, 2016, 23-28 May
- Invited talk, *Galactic and extragalactic novae - A Review*, Accretion Processes in Cosmic Sources, Saint Petersburg, Russian Federation, 2016, 5-10 September
- Invited talk, *Multifrequency Behaviour of Galactic and Extragalactic Novae*, Frascati Workshop 2017 on Multifrequency Behaviour of High Energy Cosmic Sources - XII, Palermo, Italy, 2017, June 12-17
- Invited talk, *Cataclysmic variables as gravitational wave sources*, The Golden Age of Cataclysmic Variables and Related Objects IV, Palermo, Italy, 2017, 11-16 September
- Invited talk, *Galactic and Extragalactic Novae - An Updated Review*, The Golden Age of Cataclysmic Variables and Related Objects IV, Palermo, Italy, 2017, 11-16 September
- Invited talk, *Pre-maximum and maximum of Novae: The spectroscopic observations of Nova ASASSN-17hx*, The Golden Age of Cataclysmic Variables and Related Objects IV, Palermo, Italy, 2017, 11-16 September
- Invited talk, *Multi-messenger Observations of a Binary Neutron Star Merger*, Frontier Research in Astrophysics - III, Palermo, Italy, 2018, 28 May-2 June
- Invited talk, *High Energy Astrophysical Techniques*, Frontier Research in Astrophysics - III, Palermo, Italy, 2018, 28 May-2 June
- Invited talk, *Gravitational Waves from Accreting Sources*, Accretion Processes in Cosmic Sources II, 2018, 3-8 September, Saint Petersburg, Russian Federation
- Invited talk, *Multifrequency Variable emission in Blazars*, Accretion Processes in Cosmic Sources II, 2018, 3-8 September, Saint Petersburg, Russian Federation
- Invited talk, *Galactic and Extragalactic Novae - A Review*, Accretion Processes in Cosmic Sources II, 2018, 3-8 September, Saint Petersburg, Russian Federation
- Talk, *Material and components for third generation interferometers: the cryogenic challenges*, GWADW2019 - Gravitational-Wave Advanced Detector Workshop - From Advanced Interferometers to Third Generation Observatories, 2019, 19-25 May, La Biodola, Isola d'Elba, Italia
- Invited talk, *Multi-messenger Observations of a Binary Neutron Star Merger*, Frascati Workshop 2017 on Multifrequency Behaviour of High Energy Cosmic Sources - XIII, 2019, 3-8 June, Palermo, Italy, on behalf of the LSC and Virgo Collaborations

- Talk, *Gravitational Waves from Accreting Sources*, Frascati Workshop 2019 on Multifrequency Behaviour of High Energy Cosmic Sources - XIII, 2019, 3-8 June, Palermo, Italy
- Invited talk, *Galactic and Extragalactic Novae - A Multiwavelength Review*, The Golden Age of Cataclysmic Variables and Related Objects V, 2019, 2-7 September, Palermo, Italy
- Invited talk, *Cataclysmic variables as multimessenger sources: the gravitational wave emission*, The Golden Age of Cataclysmic Variables and Related Objects V, 2019, 2-7 September, Palermo, Italy
- Invited talk, *Gravitational wave astronomy with compact binary mergers*, The Golden Age of Cataclysmic Variables and Related Objects V, 2019, 2-7 September, Palermo, Italy, on behalf of the LSC and Virgo Collaborations
- Talk, *Cryogenic challenges for third generation gravitational wave interferometers*, GRAVitational-wave Science&technology Symposium (GRASS 2019), 2019, 17 -18 October, Padova, Italy
- Invited talk, *Gravitational Wave Astronomy - The state of Art*, Frontier Research in Astrophysics - IV, Palermo, Italy, postponed due to COVID-19 emergency
- Invited talk, *Gravitational Wave Astronomy - An Updated Review*, Accretion Processes in Cosmic Sources III, Saint Petersburg, Russian Federation, postponed due to COVID-19 emergency
- Poster, *Gravitational wave emission of cataclysmic variables*, 14th Edoardo Amaldi Conference on Gravitational Waves (online), July 19-23, 2021, Melbourne, Australia
- Talk, *Long term periodicities of Be X-ray binaries*, BeXRB2021 online workshop (online), July 26-30, 2021, Valencia, Spain
- Poster, *Results from the O3 observing run of the LIGO-Virgo Collaboration*, HEASA 2021 (online), September 13-17, 2021, Southern Africa

Conference Organization

- Member of Local Organizing Committee of international conference *The Golden Age of Cataclysmic Variables and Related Objects IV*, 2017, 11-16 September, Palermo, Italy
- Member of Local Organizing Committee of international conference *Frontier Research in Astrophysics - III*, Palermo, Italy, 28 May-2 June 2018
- Member of Local Organizing Committee of international conference *Frascati Workshop 2019 on Multifrequency Behaviour of High Energy Cosmic Sources - XIII*, 2019, June 3-8, Palermo, Italy
- Member of Local Organizing Committee of international conference *The Golden Age of Cataclysmic Variables and Related Objects V*, 2019, 2-7 September, Palermo, Italy

Teaching Experience

Responsibility of courses in General Physics, Physics Laboratory, Astrophysical Techniques, Experimental Methods in Astroparticle Physics, since 1999. Designed and taught a new course about multi-messenger astronomy, *Experimental Methods for Astroparticle Physics*, with use of open data for data analysis sessions in class, involving X-ray data, gamma ray data, gravitational data.

Teaching Awards

Teaching Award in 2000.

Thesis Supervision

Supervisor or co-supervisor of 7 undergraduate and 4 graduate students.

Examination and Degree Committees

- Member of Committee for Degree in Physics from 1999 to 2001 and since 2017
- Referee of undergraduate and graduate thesis covering a broad range of topics: medical imaging, particle and radiation detectors, time series analysis, high energy physics, galactic models, astrometry, control systems, astrophysical detectors, adaptive optics, balloon X-ray experiments, cosmology, suspension systems for gravitational wave detectors, optical spectroscopy of novae, asteroseismology, gravitational wave sources, gamma ray astronomy
- Member of Committee for PhD in Physics (cycle XXXVI), University of Pisa, since 2020/2021
- Member of a Physics PhD examination committee at University of Siena, 2010
- External Reviewer of a Physics PhD thesis, Siena, 2017
- External Reviewer of a Physics PhD thesis, Siena, 2018
- External Examiner of a Physics PhD thesis, Glasgow, online discussion, 2020