VALERIA FERRARI Curriculum Vitae.

Generalities

Born: 21/3/1952, Monterotondo (Roma) ITALY

Marital status: Married, one daughther

Present Position: Professor of Theoretical Physics,
Department of Physics, *Sapienza*, University of Rome
P.le A. Moro 2, 00185 Roma (Italy)
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Education

1976 Degree in Physics summa cum laude.

Research Appointments

2000 to date *Professor of Theoretical Physics* Department of Physics, University of Rome *La Sapienza*

1993-2000 *Associate Professor* Department of Physics, University of Rome *La Sapienza*

1981-1993 *Research Associate* Department of Physics, University of Rome *La Sapienza*

1978-1981 Research assistant, Department of Physics, fellowship of the University of Rome *La Sapienza*

1977-1978 *Research assistant*, Istituto Plasma Spazio, Frascati, fellowship of the National Council of Research (CNR).

Research Grants

2010-2012 Coordinator for the node *La Sapienza* of the project *Many-body theory of nuclear systems and implications on the physics of neutron stars*, financed by MIUR (COFIN 2008, 2008KRBZTR_00, 53.340 Euro).

1998-2014 National coordinator of a project for the study of the theory and phenomenology of gravitational waves in support of gravitational wave experiments, IIS OG51, funded yearly by Istituto Nazionale di Fisica Nucleare, INFN, 136.000 Euro from 2008 to 2014.

2007-2010 National coordinator of the project *Studio di sorgenti, metodi di analisi dati e studio di rumore per LISA*, financed under the contract *Studi di cosmologia e fisica fondamentale* (contractor P. De Bernardis) by the Italian Space Agency (ASI). WP4300, ASI-I016070, 168.118 Euro

2003-2005 Coordinator for the node *La Sapienza* of the project *Numerical simulations of gravitational wave sources: linear and non linear approaches*, financed by MIUR (COFIN 2003, 2003023274_002, 59.100 Euro) .

2000-2003 Coordinator for the node *La Sapienza* of the EU Contract N.**HPRN-CT-2000-00137** for the project *Theoretical Foundations of Sources for Gravitational Wave Astronomy in the Next Century: Synergy between Supercomputer Simulations and Approximation Techniques*, (2000-2003), 126.643 Euro

Professional Activities

Committees and Professional Service:

– Member of the Steering Committe of the *Amaldi Research Center*, Sapienza University of Rome

– Vice-Chair of the COST Action CA16104 " Gravitational waves, black holes and fundamental physics", funded by the European Cooperation in Science & Technology COST (grant period April 2017-2021).

– From 2008 to 2013, chair of the Virgo-EGO Scientific Forum (VESF), financed by EGO (the European Gravitational Observatory).

From 1998 to 2014, coordinator of a national network (acronymous OG51, lately TEONGRAV), financed by INFN (Istituto Nazionale di Fisica Nucleare) for the study of the theory and phenomenology of gravitational wave sources in support of gravitational wave experiments.

– Member of the Steering Committe of the MPNS COST Action MP1304 "Exploring fundamental physics with compact stars" (NewCompStar) [2013-2017]

– Member of the evaluation panel of the Max Planck Society, for the extension of the Partnership Group for Relativistic Astrophysics, of the Center for Mathematics, Computa- tion and Cognition of UFABC, Brasil.

– Member of the Appointment Committee of the Max Planck Society's Scientific Council to appoint the Director Max Planck Institute for Gravitational Physics, Potsdam. April 2013.

– Member of the evaluation panel of the doctorate school of the Max Planck Institute for Gravitational Physics (Albert Einstein Institute) Hannover IMPRS, on Gravitational Wave Astronomy, April 2010.

– Director of the Doctoral School in Physics, Department of Physics, University of Rome *La Sapienza* (2005-2007).

– Referee for the FP7 European Commission, ERCEA and REA.
Referee for the NATO Scientific Affairs Division.
Referee for CIVR, Committee for evaluation of Research in Italy.
Referee for research projects financed by MIUR.

– Member of the Board of the International Society of General Relativity and Gravitation (2010-2019)

– Member of the Board of the Gravitational Physics Section (GPS) of the European Physical Society (EPS) (2004 to date).

– Member of the Board of the International Society of General Relativity and Gravitation (1995-2004)

– Member of the Executive Board of the Italian Society of Gravitational Physics (1996-2000,2006-2010)

Member of the Scientific Committee of 11 International Conferences and of 6 International Schools

Member of the Scientific Committee of 13 National Conferences

Editorial:

2013-2017: member of the Editorial Board of the Journal *General Relativity and Gravitation*
2006- 2010: member of the Editorial Board of the Journal *Classical and Quantum Gravity.*
1995-2007 Editor of The International Journal of Modern Physics D.
2004 : Responsible for the Scientific Revision of the Physics lemmas for the italian Dictionary Devoto-Oli, edition 2004

Referee for: Classical and Quantum Gravity, General Relativity and Gravitation, Physics Letters, Physical Review D, Physical Review Letters, Monthly Notices of the Royal Astronomical Society.

Teaching

At the Physics Department of the University of Rome *La Sapienza*:

From 1977 to 2002 I was teaching Mechanics, Thermodynamics and Electromagnetism to physicists and biologists.

From 2002 to date I have been teaching every year a course on General Relativity and an advanced course on Gravitational Waves, Neutron Stars and Black holes for the master in Physics and in Astronomy and Astrophysics.

At the Physics Department of The Enrico Fermi Institute, *The University of Chicago:*

1993- Ph.D. course: "General Relativity"

1998 - Ph.D. course: "Gravitational waves and the theory of stellar perturbations

Throughout my career I have been supervising tens of Laurea and PhD thesis of both italian and foreign students.

Invited Talks

- **53** Invited talks in international conferences/schools
- **18** Invited talks in national conferences/shools
- **56** Seminars in italian and foreign Institutes/Departments

Research Activity

During my scientific career, I developed several aspects of the theory of gravity which are related to gravitational waves. After working for a few years (1976-1983) on the data analysis of the gravitational experiment with resonant bars at the University of Rome, I worked on black hole quasinormal modes and, during the years 1984-90, on exact solutions of Einsteins equations describing plane gravitational waves and their non linear interaction. In 1983 I started collaborating with prof. S.Chandrasekhar on exact solutions of Einsteins equations, and later, from 1990 to 1995, on a new formulation of the theory of stellar perturbations, which brought to light new phenomena regarding the emission of gravitational waves from compact stars. We collaborated for twelve years and wrote eleven joint papers on these subjects. Over the years with my group in Rome I have been studying gravitational wave sources, mainly neutron stars and black holes, both isolated and coalescing in binaries, or contributing to the gravitational wave background.
My recent scientific interests are focussing on two main topics: ii) the imprint that the equation of state prevailing in neutron stars inner core leaves on the waveforms these sources emit in several astropysical processes; ii) possible deviations from General Relativity in strong field, high curvature regimes, their signature on gravitational waveforms and their detectability.

Publications

- **117** Articles on Refereed Journals
- **18** Articles in Conference Proceedings
- **3** Textbooks
- **2** Books of Conference Proceedings

For more information see my homepage at
http://www.roma1.infn.it/teongrav/valeria.html