

VALERIA FERRARI *Curriculum Vitae*.

Generalities

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

Marital status: Married, one daughter

Present Position: Professor of Theoretical Physics,
Department of Physics, *Sapienza*, University of Rome
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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 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 astrophysical processes; ii) possible deviations from General Relativity in strong field, high curvature regimes, their signature on gravitational waveforms and their detectability

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 Committee 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 TEON-GRAV), 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 Committee 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, Computation 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/schools
- **56** Seminars in italian and foreign Institutes/Departments

Visiting Positions

- 2016 Visiting professor at the University of Tubingen, Germany, 7/2016
- 1998 Visiting professor at the Enrico Fermi Institute, The University of Chicago, 3-5/98
- 1997 Visiting Scientist at The Albert Einstein Institute in Potsdam, 11/97
- 1993-1995 Visiting professor at the Enrico Fermi Institute, The University of Chicago, 2/93, 10-12/93, 8/94, 7-8/95, collaboration with Prof. S. Chandrasekhar.
- 1990-1992 Visiting Scientist at The Enrico Fermi Institute, The University of Chicago, 2-3/90,11-12/90, 7-8/91, 2/92, 8/92, 10/92, collaboration with Prof. S. Chandrasekhar.
- 1990 Visiting Scientist at the University of Syracuse N.Y.4/90 Visiting Scientist at the University of Bilbao, Bilbao, Spain, 6/90 collaboration with Prof. Jesus Ibanez.
- 1988-1989 Visiting Scientist at The Enrico Fermi Institute, The University of Chicago, 2-4/88, 1-2/89,7-8/89, collaboration with Prof. S. Chandrasekhar.
- 1988 Visiting Scientist at CERN , Geneva, Switzerland, 2/88 collaboration with. Prof. G. Veneziano
- 1986-1987 Visiting Scientist at The Enrico Fermi Institute, The University of Chicago, 5/86, 9-10/86, 2/87, collaboration with Prof. S. Chandrasekhar.
- Visiting Scientist at the University of Palma de Mallorca, Spain 2/86, 7/87, collaboration with Prof. Jesus Ibanez.
- 1985 Visiting Scientist at the Institut for Theoretical Physics, Warsaw, Polland, 2/85, collaboration with Prof. S. Bazanski
- Visiting Scientist at The Enrico Fermi Institute, The University of Chicago, 7-8/85, collaboration with Prof. S. Chandrasekhar.
- 1983 Visiting Scientist at the Institut for Theoretical Physics, Warsaw, Polland, 4/83, collaboration with Prof. S. Bazanski
- Visiting Scientist at The Enrico Fermi Institute, The University of Chicago, 11/83, collaboration with Prof. S. Chandrasekhar.
- 1982 Visiting Scientist at the Institut for Theoretical Physics, Koeln, Germany, 3/82, 7-8/82, collaboration with Prof. B. Mashhoon.

Publications

1. P. Pani, V. Ferrari “On gravitational-wave echoes from neutron-star binary coalescences”, *Class. Quantum Grav.*, **35**, 15LT01, 2018
2. T. Abdelsalhin, A. Maselli, V. Ferrari “Solving the relativistic inverse stellar problem through gravitational waves observation of binary neutron stars”, *Phys. Rev. D* **97**, 084014, 2018

3. A. Maselli, P. Pani, V. Cardoso, T. Abdelsalhin, L. Gualtieri, V. Ferrari, “Probing Planckian corrections at the horizon scale with LISA binaries”, *Phys. Rev. Lett.* **120**, 081101, 2018
4. E. Maggio, P. Pani, V. Ferrari, “Exotic Compact Objects and How to Quench their Ergoregion Instability”, *Phys. Rev. D* **96**, 104047, 2017
5. G. Camello, A. Lovato, L. Gualtieri, O. Benhar, J. A. Pons, V. Ferrari, “Evolution of a protoneutron star with a nuclear many-body equation of state: Neutrino luminosity and gravitational wave frequencies”, *Phys. Rev. D* **96**, 043015, 2017
6. Franchini N., Pani P., Maselli A., Gualtieri L., Herdeiro C.A.R., Radu E., Ferrari V., Constraining Black Holes with Light Boson Hair and Boson Stars using Quasi “Periodic Oscillations” *Phys. Rev. D* **95**, 124025, 2017
7. A. Maselli, P. Pani, R. Cotesta, L. Gualtieri, V. Ferrari, L. Stella, “Geodesic models of quasi-periodic-oscillations as probes of quadratic gravity” *Astrophys. J* **843**, 25, 2017
8. Ferrari V., “L’onda perfetta”, *Asimmetrie*, Rivista dell’Istituto Nazionale di Fisica Nucleare, anno 11 numero 21, novembre 2016
9. Blazquez-Salcedo J.L., Macedo C.F.B., Cardoso V., Ferrari V., Gualtieri L., Scen Khoo F.S., Kunz J., Pani P., “Perturbed black holes in Einstein-dilaton-Gauss-Bonnet gravity: stability, ringdown, and gravitational-wave emission”, *Phys. Rev. D* **94**, 104024, 2016
10. P. Pani, L. Gualtieri, A. Maselli, V. Ferrari, “Recent progress on the tidal deformability of spinning compact objects” *Intern. Journal of Modern Physics D*, Vol. 25(9), 1641001, 2016
11. M. Maselli, S. Marassi, V. Ferrari, K.D. Kokkotas, R. Schneider “Constraining Modified Theories of Gravity with Gravitational-Wave Stochastic Backgrounds”, *Phys. Rev. Lett.* **117** (9), 091102, 2016
12. G. Camello, L. Gualtieri, J. A. Pons, V. Ferrari, “Spin evolution of a proto-neutron star” *Phys. Rev. D* **94** (2), 024008, 2016
13. A. Maselli, L. Gualtieri, P. Pani, L. Stella, V. Ferrari, “Testing Gravity with Quasi Periodic Oscillations from accreting Black Holes: the Case of Einstein-Dilaton-Gauss-Bonnet Theory” *Astrophys. J.* **801**, 115, 2015
14. P. Pani, L. Gualtieri, A. Maselli, V. Ferrari, “Tidal deformations of a spinning compact object” *Phys. Rev. D* **92**, 024010, 2015
15. A. Maselli, P. Pani, L. Gualtieri and V. Ferrari, “Rotating black holes in Einstein-Dilaton-Gauss-Bonnet gravity with finite coupling” *Phys. Rev. D* **92**, 083014, 2015
16. P. Pani, L. Gualtieri, V. Ferrari, “Tidal Love numbers of a slowly spinning neutron star” *Phys. Rev. D* **92**, 124003, 2015
17. A. Maselli, V. Ferrari “Coincidence Searches of Gravitational Waves and Short Gamma-Ray Bursts” Carlos Sopuerta et al ed. /it Gravitational Wave Astrophysics *Astrophysics and Space Science Proceedings*, vol. **40**, 75-83 Springer Int. Publishing, Switzerland 2015

18. A. Maselli, V. Ferrari, “Low latency search for gravitational waves from black-hole-neutron-star binaries in coincidence with short gamma-ray bursts” *Phys. Rev. D* **89**, 064056, 2014
19. G. Martinon, A. Maselli, L. Gualtieri, V. Ferrari “Rotating protoneutron stars: Spin evolution, maximum mass, and I-Love-Q relations”, *Phys. Rev. D* **90**, 1550, 2014
20. T. Takahashi et al, “The Large Observatory for x-ray timingSpace Telescopes and Instrumentation 2014: Ultraviolet to Gamma Ray”, *Space Telescopes and Instrumentation 2014: Ultraviolet to Gamma RaySpace Telescopes and Instrumentation 2014: Ultraviolet to Gamma Ray*, SPIE, 2014, doi: 10.1117/12.2055913
21. A. Maselli, V. Cardoso, V. Ferrari, L. Gualtieri, P. Pani “Equation-of-state-independent relations in neutron stars”, *Phys. Rev. D* **88**, 023007, 2013
22. A. Maselli, L. Gualtieri, V. Ferrari, “Constraining the equation of state of nuclear matter with gravitational wave observations: Tidal deformability and tidal disruption”, *Phys. Rev. D* **88**, 104040, 2013
23. V. Ferrari, L. Gualtieri, A. Maselli, “Tidal interaction in compact binaries: a post-Newtonian affine framework”, *Phys. Rev. D* **85**, 044045, 2012
24. B. Sathyaprakash, et al “Scientific Objectives of Einstein Telescope” *Class. Quantum Grav.*, **29**, 124013, 2012
25. A. Maselli, L. Gualtieri, F. Pannarale, V. Ferrari, “On the validity of the adiabatic approximation in compact binary inspirals” *Phys. Rev. D* **86**, 044032, 2012
26. V. Cardoso, et al “NR/HEP: roadmap for the future”, *Class. Quantum Grav.* **29**, 244001 , 2012
27. S. Marassi, R. Ciolfi, R. Schneider, L. Stella & V. Ferrari “Stochastic background of gravitational waves emitted by magnetars” *MNRAS*, **411** 2549-2557, 2011
28. L. Gualtieri, R. Ciolfi and V. Ferrari “Structure, Deformations and Gravitational Wave Emission of Magnetars” *Class. Quantum Grav.*, **28**, 114014, 2011
29. S. Marassi, R. Schneider, G. Corvino, V. Ferrari, Simon Portergies Zwart, “Imprint of the merger and ring-down on the gravitational wave background from black hole binaries coalescence”, *Phys. Rev. D* **84**, 124037, 2011
30. V. Ferrari “Gravitational waves from perturbed stars” in “Fluid flows to black holes: A Tribute to S Chandrasekhar on His Birth Centenary”, edited by D.J. Saikia and V. Trimble, World Scientific Publishing, Singapore 2011, 247-268
31. G. Tagliaferri et al “The NHXM observatory”, *Experimental Astronomy, Astrophysical Instrumentation and Methods*, *Experimental Astronomy* October 2012, Volume 34, Issue 2, pp 463-488, Springer 2011
32. G. F. Burgio, V. Ferrari, L. Gualtieri, H.-J. Schulze, “Oscillations of hot, young neutron stars: Gravitational wave frequencies and damping times”, *Phys. Rev. D* **85**, 044017, 2011

33. N. Andersson, V. Ferrari, D.I. Jones, K.D. Kokkotas, B. Krishnan, J. Read, L. Rezzolla, B. Zink, "Gravitational waves from neutron stars: Promises and challenges" Review Article, *General Relativity and Gravitation*, **43 n.2**, 409-436, 2011
34. V. Ferrari, L. Gualtieri, F. Pannarale, "Neutron star tidal disruption in mixed binaries: the imprint of the equation of state" *Phys. Rev. D* **81**, 064026, 2010
35. V. Ferrari, L. Gualtieri, F. Pannarale, "Black Hole - neutron star Coalescing Binaries" *Int. Journal of Mod. Phys. D*, **19**, 1241-1248, 2010
36. R. Ciolfi, V. Ferrari, L. Gualtieri, "Structure and deformations of strongly magnetized neutron stars with twisted torus configurations" *Mon. Not. R. Astron. Soc.* **406 n.4**, 2540-2548, 2010
37. R. Schneider, S. Marassi, V. Ferrari, "Stochastic backgrounds of gravitational waves from extragalactic sources" *Classical and Quantum Gravity*, **27** 194007-194014, 2010
38. V. Ferrari, "Probing the physics of neutron stars with gravitational waves" *Classical and Quantum Gravity*, **27** 194006-194014, 2010
39. V. Ferrari, L. Gualtieri, F. Pannarale "A semi-relativistic model for tidal interactions in BH-NS coalescing binaries", *Classical and Quantum Gravity*, **26** 125004, 2009
40. R. Ciolfi, V. Ferrari, L. Gualtieri, "Relativistic models of magnetars: the twisted torus magnetic field configuration", *Mon. Not. R. Astron. Soc.* **397**, 913-924, 2009
41. S. Marassi, R. Schneider, V. Ferrari, "Gravitational wave backgrounds and the cosmic transition from Population III to Population II stars", *Mon. Not. R. Astron. Soc.* **398**, 293-302, 2009
42. V. Ferrari, L. Gualtieri, "Quasi-Normal Modes and Gravitational Wave Astronomy" *Gen. Rel and Grav.* **40**, 945-970, 2008
43. A. Colaiuda, V. Ferrari, L. Gualtieri, J.A. Pons "Relativistic models of magnetars: structure and deformations" *Mon. Not. R. Astron. Soc.* **365**, 2080-2096, 2008
44. V. Ferrari, "What gravitational waves say about the inner structure of neutron stars" In: *Exotic States of Nuclear Matter. EXOCT07. Catania. 11-15 June 2007.* (pp. 225-234). ISBN/ISSN: 978-981-279-703-2. SINGAPORE: World Scientific Publishing Co.Pte. Ltd. (SINGAPORE).
45. O. Benhar, V. Ferrari, L. Gualtieri, S. Marassi "Quark matter imprint on Gravitational Waves from oscillating stars", *Gen. Rel and Grav.* **39**, n. 9, 1323-1330, 2007.
46. V. Ferrari, L. Gualtieri, S. Marassi "A new approach to the study of quasi-normal modes of rotating stars", *Phys. Rev. D* Vol.76, No.10, 104033, 2007
47. V. Ferrari, L. Gualtieri, J.A.Pons "Unstable g-modes in Proto-Neutron Stars" *Classical and Quantum Gravity*, **24** (2007) 5093-5102
48. C. Casalvieri, V. Ferrari, A. Stavridis, "Gravitational signals due to tidal interactions between white dwarfs and black holes", *Mon. Not. R. Astron. Soc.* **365**, 929, 2006
49. V. Ferrari, L. Gualtieri, L. Rezzolla "A hybrid approach to black hole perturbations from

- extended matter sources”, Phys. Rev. D73, n. 12, 124028, 2006
50. L. Gualtieri, J.A. Pons, J.A. Miralles and V. Ferrari “Relativistic r-modes and shear viscosity” AIP Conf. Proc., 861, 638, 2006
 51. V. Ferrari “Imprint of the equation of state of dense matter on gravitational waves emitted by oscillating neutron stars” J. Phys. Conf. **Ser. 8**, 58-70, 2005
 52. O. Benhar, V. Ferrari and L. Gualtieri, “Gravitational waves from neutron stars described by modern EOS”, AIP Conf. Proc. **751**, 211, 2005
 53. J. A. Pons, L. Gualtieri, V. Ferrari, J. A. Miralles, “Relativistic r-modes and Shear viscosity: regularizing the continuous spectrum”, Mon. Not. R. Astron. Soc. **363**, 121, 2005
 54. O. Benhar, V. Ferrari, L. Gualtieri and S. Marassi, “Perturbative approach to the structure of rapidly rotating neutron stars”, Phys. Rev. D **72**, 044028, 2005
 55. V. Ferrari, L. Gualtieri, J.A.Pons, A. Stavridis, “Rotational effects on the oscillation frequencies of newly born proto-neutron stars” Mon. Not. R. Astron. Soc., **350 n.2**, 763-768, 2004
 56. V. Ferrari, L. Gualtieri, J.A.Pons, A. Stavridis, “Gravitational waves from rotating proto-neutron stars” Class. Quant. Grav.,**21 n. 5**, S515-S519, 2004
 57. O. Benhar, V. Ferrari, L. Gualtieri “Gravitational Wave asteroseismology revisited” Phys. Rev. **D70 n.12**, 124015-1/124015-9 2004
 58. V. Ferrari “Perturbations of black holes” in *Current Trends in Relativistic Astrophysics, Theoretical Numerical, Observational* ed. by L. Fernandez-Jambrina, L.M. Gonzalez-Romero, LNP 617, 50-67 Springer Verlag 2003
 59. V. Ferrari “Stellar Perturbations” in *Current Trends in Relativistic Astrophysics, Theoretical Numerical, Observational* ed. by L. Fernandez-Jambrina, L.M. Gonzalez-Romero, LNP 617, 89-112 Springer Verlag 2003
 60. G. Miniutti, J. A. Pons, E. Berti, L. Gualtieri, and V. Ferrari “Non-radial oscillation modes as a probe of density discontinuities in neutron stars” Mon. Not. R. Astron. Soc., **338 n. 2**, 389, 2003
 61. V. Ferrari, G. Miniutti, and J. A. Pons “Gravitational waves from newly born, hot neutron stars” Mon. Not. R. Astron. Soc., **342 n.2**, 629-638, 2003
 62. V. Ferrari “What Gravitational waves say about the structure and the evolution of astrophysical sources” Invited Talk, Proceedings of the J. Hopkins Workshop on Current Problems in Particle Theory 25, Firenze 3-5 September 2001. “2001:A Relativistic Spacetime Odyssey, ed. by I. Ciufolini, D. Dominici, L. Lusanna, World Scientific Pub. ,p. 261-282, 2003
 63. V. Ferrari, G. Miniutti, J. A. Pons, ”Gravitational Waves from Neutron Stars at different evolutionary stages” Class. Quant. Grav.,**20 n. 17**, S841-S851, 2003
 64. J.A. Pons, E. Berti, L. Gualtieri, G. Miniutti and V. Ferrari “Gravitational signals emitted by a point mass orbiting a neutron star: effects of stellar structure.” Phys. Rev. D65, 104021, 2002

65. E. Berti, J.A. Pons, G. Miniutti, L. Gualtieri and V. Ferrari “Are Post-Newtonian templates faithful and effectual in detecting gravitational signals from neutron star binaries?” *Phys. Rev. D* **66**, 064013 2002
66. R. Schneider, V. Ferrari, S. Matarrese “Stochastic background of gravitational waves from compact sources” in *Recent Developments in General Relativity*, B. Casciaro et al. ed., Springer-Verlag, 469-482, 2000
67. R. Schneider, V. Ferrari, S. Matarrese, S.F. Portegies Zwart ”Gravitational waves from cosmological compact binaries” *Mon. Not. R. Astron. Soc.*, **324 n.4**, 797-810, 2001
68. V. Ferrari, M. Pauri, F. Piazza “Quasinormal modes of charged dilatonic black holes” *Phys. Rev. D*, **63 n. 6**, 064009-1/064009-13, 2001
69. V. Ferrari “Sources of gravitational waves” Invited Talk, CAPP2000, Conference on Cosmology and Particle Physics, July 17 - 28, 2000, Verbier (Switzerland) R. Durrer et al. ed., The American Institute of Physics, New York, 253-262, 2001
70. E. Berti, V. Ferrari “Excitation of g-modes of solar type stars by an orbiting companion” *Phys. Rev. D* **63**, 064031, 2001
71. L. Gualtieri, E. Berti, J.A. Pons, G. Miniutti and V. Ferrari “Gravitational signals emitted by a point mass orbiting a neutron star: a perturbative approach” *Phys. Rev. D* **64**, 104007, 2001
72. V. Ferrari “Different approaches to the study of the gravitational radiation emitted by Astrophysical Sources” *Annalen der Physik*, **1**, 3-17, 2000
73. P. Astone, V. Ferrari, M. Maggiore, J. D. Romano “Stochastic background of gravitational waves” *Int. J. Mod. Phys. D*, **9 n.3** 361-368, 2000
74. R. Schneider, A. Ferrara, B. Ciardi, V. Ferrari, S. Matarrese “Gravitational Waves Signals from the Collapse of the First Stars” *Mon. Not. R. Astron. Soc.*, **317 n.2**, 385-390, 2000
75. V. Ferrari, M. D’Andrea, E. Berti “Gravitational waves emitted by extrasolar planetary systems” *Int. J. Mod. Phys. D*, **9 n. 5**, 495-509, 2000
76. V. Ferrari, K.D. Kokkotas “Scattering of particles by neutron stars: time-evolution for axial perturbations” *Phys. Rev. D*, **62**, 107504, 2000
77. R. Schneider, V. Ferrari, S. Matarrese “Stochastic background of gravitational waves from compact sources” in *Recent Developments in General Relativity*, B. Casciaro et al. ed., Springer-Verlag, 469-482, 2000
78. V. Ferrari, S. Matarrese, R. Schneider “Gravitational Wave Background from a Cosmological Population of Core-Collapse Supernovae” *Mon. Not. R. Astron. Soc.* **303**, 247-257, (1999)
79. V. Ferrari, S. Matarrese, R. Schneider “Stochastic background of gravitational waves generated by a cosmological population of young, rapidly rotating neutron stars” *Mon. Not. R. Astron. Soc.* **303**, 258-264, (1999)
80. V. Ferrari “Gravitational wave backgrounds of astrophysical origin” Invited Talk, 3k Cosmology:

EC-TMR Conference, L. Maiani et al. ed., The American Institute of Physics, 315, 1999

81. E. Berti, O. Benhar, V. Ferrari “The imprint of the equation of state on the axial w-modes of oscillating neutron stars” *Mon. Not. R. Astron. Soc.* **310**, 797-803, 1999
82. V. Ferrari, L. Gualtieri, A. Borrelli “Stellar pulsations excited by a scattered mass” *Phys. Rev.* **D59**, 1240-1252, 1999
83. V. Ferrari “ Energy-conservation laws for perturbed stars and black holes” in “Black Holes, Gravitational Radiation and the Universe”, edited by B.R.Iyer and B.Bhawal, Kluwer Academic Publishers, Dordrecht, The Netherlands, 53-68, 1998
84. V. Ferrari, C. Palomba “Gravitational Signals emitted in core collapses leading to black hole formation”, *Int. J. of Mod. Phys.* **D7 n.6**, 825-848, 1998
85. V. Ferrari : “Astrophysical sources of gravitational waves”, Invited Talk, Proceedings of The 12th Italian Conference on General Relativity and Gravitational Physics, Edited by M.Bassan, V.Ferrari et.al., World Scientific Publ., 149-161, 1997
86. V. Ferrari, L. Gualtieri : “On the perturbations of a non-rotating star excited by a massive source. I. The matching conditions at the surface of the star” *Int. J. of Mod. Phys.* **D6 n. 3**, 323-339, 1997.
87. V. Ferrari: ”Gravitational Waves, stars and black holes” Invited Talk, in ”Black holes and Relativistic stars” a Symposium volume edited by R. Wald, The University of Chicago Press, 1-23, 1997;
88. In collaboration with B. Caron et al. : “The Virgo Interferometer”, *Class. Quantum Grav.* **14**, 1461-1469, 1997
89. In collaboration with B. Caron et al. : The VIRGO Interferometer For Gravitational Wave Detection” *Nuclear Physics B Proceedings Supplements*, **54**, 167-175, 1997
90. V. Ferrari : “Non radial pulsations of compact objects in General Relativity: an overview”, Invited talk to the VII Marcel Grossmann Meeting July 24-30, Stanford, USA, 1994, *Proceedings of the 7th Marcel Grossmann Meeting* ed. by R. T.Jantzen, R.Ruffini & G.Mac Keiser, World Scientific Publishing Co Pte Ltd, 537-559, 1996
91. V. Ferrari : “Gravitational waves emitted by stars and black holes: frequencies, energies and waveforms”, Invited talk, XI Italian Conference on General Relativity and Gravitational Physics Trieste Sept. 1994, Proceedings World Scientific Publ. 3-46, 1995.
92. S.Chandrasekhar, V.Ferrari : “On the non radial oscillations of stars V. A fully relativistic treatment of a newtonian star” *Proc. of the R. Soc. Lond.* **A450**, 1-14, 1995.
93. V. Ferrari : “The theory of perturbations of stars”, foreword to the Selected Papers of S. Chandrasekhar, **vol. 7**, 3-8, The University of Chicago Press, 1996
94. V. Ferrari : “The quasi-normal modes of stars and black holes”, Invited Talk, Proceedings of The International Conference on Gravitational Waves: Sources and Detectors, Cascina (Pisa), World Scientific Publ. 22-33, 1996

95. V.Ferrari, M. Germano : “Scattering of gravitational waves by newtonian stars” Proc. of the R. Soc. Lond. **A444**, 389-398, 1994.
96. Donato Bini, V.Ferrari: “Scattering of Dirac particles by gravitational plane waves”, Int. J. Mod. Phys. **D vol.4 n.3**, 291-304, 1995
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