

Curriculum Vitae

INFORMAZIONI PERSONALI

Nome VALERIA
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FORMAZIONE TITOLI

Degree in Physics, University "La Sapienza" of Rome, 1993 (thesis subject: non-linear effects in the propagation of gravitational waves)

Ph. D. in Mathematics, University "La Sapienza" of Rome 1999 (thesis subject: kinetic limit for particles systems)

ATTIVITA' DIDATTICA

Teaching Assistant:

Mathematical Physics at INdAM (Istituto Nazionale di Alta Matematica), 1996-97, 1997-98

Calculus II at Physics Department, 3rd University of Rome, 2001-2002

Fundamental of Mathematical Physics, at Mathematics Department, University "La Sapienza" of Rome, 2002-03

Mathematical Analysis II, at Aerospace and Chemistry engineering, University of Palermo, 2005

Rational Mechanics, Faculty of Engineering, University of Palermo, 2012

Courses:

Mathematical physic models, at Architecture Faculty, 3rd University of Rome, 1998-99

Rational Mechanics, Aerospace Engineering, University of Palermo, 2005

Numerical Methods for Engineering, Chemical Engineering, University of Palermo, 2005, 2006

Calculus II, Faculty of Engineering, University of Palermo, 2007, 2008, 2010

Rational Mechanics, Faculty of Engineering, University of Palermo, 2011

Analysis, School of Fundamental and Applied Sciences, Informatics, University of Palermo, 2014

Mathematical Physics (Part 1 of 2), School of Fundamental and Applied Sciences, Mathematics, University of Palermo, 2015-2023

RICERCHE FINANZIATE

Research projects (as PI):

research project "ex-60%" (University of Palermo) 2005, 2007, 2012

GNFM research projects (IndAM), 2008, 2011, 2013, 2015, 2017

INCARICHI / CONSULENZE

Referee and review activities:

Referee of research proposals PRIN (Research Project of National Interest) and FIRB (Future in research) for the Italian Ministry of Education, University and Research (MIUR)

Reviewer for VQR (Italian Research Quality Assessment)

Reviewer of research proposals for Fonda za nauku Republike Srbije (Science Fund of the Republic of Serbia)

Referee, reviewer and compiler of scientific entries (mathematics, physics) for Istituto della Enciclopedia Italiana (Treccani)

Reviewer for Mathematical Reviews (AMS) and Zentralblatt MATH (EMS)

Long term invitations:

IHES, January - February 2000
Centre E. Borel, November 2002
ENS-Cachan, Visiting Professor November 2005 (GREFI-MEFI), June 2002, June 2006, November 2007, June 2008, October, 2010, (+Ecole Polytechnique) January 2011
ENS-Cachan + CMLS Ecole Polytechnique 18th June-5th July 2011, January-February 2012, February 2015 .
IMJ-PRG-Paris7 + CMLS Ecole Polytechnique, February-March 2016

ASSOCIAZIONI SCIENTIFICHE

Member of GNFM (Gruppo Nazionale per la Fisica Matematica)

PUBBLICAZIONE

Articles

- E. Caglioti, M. Pulvirenti, V. Ricci "Derivation of a linear Boltzmann equation for a lattice gas", Markov Processes. Related Fields, vol. 6 (2000) n.3, pp.265-285
- L. Desvillettes, V. Ricci "A Rigorous Derivation of a Linear Kinetic Equation of Fokker-Planck Type in the Limit of Grazing Collisions", Journal of Stat. Phys., vol.104 (2001), n. 5/6
- F. Bonetto, D. Daems, J.L. Lebowitz, V. Ricci "Properties of stationary non equilibrium states in the thermostatted periodic Lorentz gas II: the many point particles system", Phys.Rev. E (3), vol.65 (2002), n.5, 9 pp.
- L. Desvillettes, V. Ricci "Non markovianity of the Boltzmann-Grad limit of a system of random obstacles in a given force field", Bull. Sci. Math., vol.128 (2004), n.1, pp.39-46.
- V. Ricci, B. Wennberg "On the derivation of a linear Boltzmann equation from a periodic Lorentz gas", Stoch.Process. Appl., vol.111 (2004), pp. 281-315.
- V. Ricci "Non Markovian behavior of the Boltzmann-Grad limit of linear stochastic particle systems", Commun.Math. Sci., Supplemental Issue, N. 1 (2007), pp. 95-105.
- L. Desvillettes, V. Ricci "The Boltzmann-Grad Limit of a Stochastic Lorentz gas in a force field", Bulletin of the Institute of Mathematica, Academia Sinica (NS), vol. 2 (2007), n.2, pp. 637-648
- L. Desvillettes, F. Golse, V. Ricci "The mean-field limit for solid particles in a Navier-Stokes flow", J. Stat. Phys., vol. 131 (2008), p. 941-967.
- Y. Elskens, M. Kiessling, V. Ricci, "The Vlasov limit for a system of particles which interact with a wave field". Comm. Math. Phys., vol. 285 (2009) n.2; p. 673-712,
- G. Cavallaro, L. Desvillettes, V. Ricci, "About the link between the detailed description of transitions in an ion and the average ion models", Commun. Math. Sci., vol.7 n.2 (2009), 471-488
- C. Bernardin, V. Ricci, "A simple particle model for a system of coupled equations with absorbing collision term" Kinetic and Related Models, vol. 4 n.3 (2011); p. 633-668
- F. de Vuyst, V. Ricci, F.Salvarani, "Nonlocal second order vehicular traffic flow models and Lagrange-remap finite volumes" Finite Volumes for Complex Applications VI Problems & Perspectives, Springer Proceedings in Mathematics, vol. 4 (2011), p. 781-789
- D. Bouche, A. Decoster, L. Desvillettes, V. Ricci "A Coherent Derivation of an Average Ion Model Including the Evolution of Correlations Between Different Shells", MathematicS in Action, vol.6 n.2 (2013), p.1-14
- F. Golse, C. Mouhot, V. Ricci "Empirical measures and Vlasov Hierarchies", Kinetic and Related Models, vol.6n.4, p.919-943
- V. Ricci "Large number asymptotics for two--component systems with self--consistent coupling". From Particle Systems to Partial Differential Equations, Springer Proceedings in Mathematics & Statistics, vol. 75 (2015), p. 285-300
- L. Desvillettes, F. Golse, V. Ricci, "Derivation of a homogenized two-temperature model from the heat equations", ESAIM: Mathematical Modelling and Numerical Analysis, vol.48 (2014), p.1583-1613
- V. Ricci "Modelling of systems with a dispersed phase: "measuring" small sets in the presence of elliptic operators". From Particle Systems to Partial Differential Equations III, Springer Proceedings in Mathematics & Statistics (2015), vol. 162, p. 285-300.
- V. Ricci "Derivation of models for thin sprays from a multiphase Boltzmann model", submitted
- Bernard E, Desvillettes L, Golse F, Ricci V " A Derivation of the Vlasov-Navier-Stokes Model for Aerosol Flows from Kinetic Theory", Commun. Math. Sci., vol. 15 (2017), p. 1703-1741.
- Bernard E, Desvillettes L, Golse F, Ricci V "A Derivation of the Vlasov-Stokes System for Aerosol Flows from the Kinetic Theory of Binary Gas Mixtures", Kinetic and Related Models, vol. 11 (2017), p. 43-69.

-L.Desvillettes, F.Golse, V.Ricci "A formal passage from a system of Boltzmann equations for mixtures towards a Vlasov-Euler system of compressible fluids", Acta Mathematicae Applicatae

Sinica, , vol. 35, p. 1-16 (2019).

-S.Asteriti,V.Ricci,L.Cangiano "Two simple criteria to estimate an objective's performance when imaging in non design tissue clearing solutions",Journal Of Neuroscience Methods, vol. 332, p. 1-9 (2020).

-V. Ricci, B.Coppi, R.Spigler "Magnetic reconnection: some basic ideas and a review on a collisionless model", From Particle Systems to Partial Differential Equations X, Springer Proceedings In Mathematics & Statistics, p.289-300 (2024).

-F.Golse, V. Ricci, A.J.Soares (early access) "A Model for slowing particles in random media", Discrete and Continuous Dynamical Systems, 23 pp. (2025).

Encyclopedia Articles:

-"Meccanica Statistica", Enciclopedia Italiana -IX Appendice, voce, Istituto dell'Enciclopedia Italiana, (2015)

-"Castelnuovo, Emma", Enciclopedia Italiana -IX Appendice, biografia, Istituto dell'Enciclopedia Italiana, (2015)

-"Ladyzhenskaya, Olga", Enciclopedia Italiana -IX Appendice, biografia, Istituto dell'Enciclopedia Italiana, (2015)

-"Lax, Peter", Enciclopedia Italiana -IX Appendice, biografia, Istituto dell'Enciclopedia Italiana, (2015)

-"Malliavin, Paul", Enciclopedia Italiana -IX Appendice, biografia, Istituto dell'Enciclopedia Italiana, (2015)

-"Alessio Figalli", Libro dell'Anno 2018, Istituto dell'Enciclopedia Italiana (2018)

-"Alan Mathison Turing", "Analisi Matematica", "Gottfried Wilhelm Leibniz", "Niels H. Abel", "Talete di Mileto", "Crittografia", "Stocastico", La Treccani dei Ragazzi, Istituto dell'Enciclopedia Italiana (2020)

Other Publications

-A.Degasperis, V. Ricci "Nonlinearity and dispersion in the propagation of gravitational waves", Cryogenic gravitational waves antennae: a progress workshop; Legnaro 19-22/6/1993

-A. Degasperis, V. Ricci "Propagation of gravitational waves in matter" Proceedings of the International Conference on Gravitational Waves: sources and detectors. Cascina (Pisa), 19-23 marzo 1996 (World Scientific Publishing Co, Singapore, 1997).

-V. Ricci "Derivations of kinetic equations from systems of particles" (Abstract of PhD thesis),Boll. Unione Mat. Ital., Sez. A, Mat. Soc. Cult. (8) 3 Suppl.,pp.197-200 (2000)

-V. Ricci "Rigorous analysis of a model of spray in quasi-static condition", Oberwolfach reports- OWR, vol. 3, n. 4, Report n.54 (2006), 3244-3245

-B. Coppi, B. Basu, R. Gatto, V. Ricci, R. Spigler (2019). "Three-dimensional features in burning plasmas". In: 46th EPS Conference on Plasma Physics. p. 1, European Physical Society, Milan (Italy)

-Ricci V., Coppi B. (2021). "Thermal Energy Density Driven Magnetic Reconnection". In: 63rd Annual Meeting of the APS Division of Plasma Physics. Bulletin Of The American Physical Society, vol. 66, ISSN: 0003-0503

-Coppi B., Basu B., Ricci V. (2021). "Cyclical generation of reconnected magnetic fields by electron pressure gradients". 107 ° Congresso Nazionale Società Italiana Di Fisica.ISBN: 978-88-7438-127-2

-V.Ricci, B.Coppi, B.Basu (2022). "Magnetic Reconnection Driven by Thermal and Non-thermal Particle Energy Densities". 64th Annual Meeting of the APS Division of Plasma Physics. Bulletin Of The American Physical Society, vol. 2022, ISSN: 0003-0503

-V. Ricci, B.Coppi, B.Basu (2023). ""Magneto-Kinetic" Reconnection Beyond Fluid Descriptions". In: 65th Annual Meeting of the APS Division of Plasma Physics. Bulletin Of The American Physical Society, vol. 65th Annual Meeting of the APS Division of Plasma Physics, ISSN: 0003-0503

-B. Coppi, B. Basu, V. Ricci (2023). "Formation of Magnetic Fields on Grand Scale Distances Involving Anisotropic Electron Distributions". vol. 65th Annual Meeting of the APS Division of Plasma Physics. Bulletin Of The American Physical Society,ISSN: 0003-0503

Editor

C.Bernardin, F.Golse, P.Gonçalves, V.Ricci, A.J.Soares (Eds.) From Particle Systems to Partial Differential Equations. International Conference, Particle Systems and PDEs VI, VII and VIII, 2017-2019, (2021), Springer Proceedings In Mathematics & Statistics, vol. 352

ATTIVITA' SCIENTIFICHE

Cooperation with ENEA-Casaccia, September 1994 - March 1995 (numerical modelling of the Mediterranean Sea).

Participation to the EU TMR network "Asymptotic methods in kinetic theory", 1999 - 2001

Participation to the EU network HyKE (Hyperbolic and Kinetic Equations), 2002-2005

Participation to joint industry projects within LRC ENS-Cachan/CEA, since 2005

Participation to IGNITOR-ISC Project, "Associatura" (Association) with CNR-ISC 2019-2023
Association with INAF-IAPS since 2024

Invited presentations:

- Euroconference on Asymptotic Methods and Applications in Kinetic and Quantum-Kinetic Theory" (plenary lecture), Granada September 17th – 21st 2001.
- Workshop "Systèmes à grand nombre de particules, quantiques et classiques: descriptions stochastiques et déterministes", Rennes May 26th – 28th 2004.
- Sixth International Workshop on Mathematical Aspects of Fluids and Plasma Dynamics, Kyoto (Japan) September 19th – 23rd 2004.
- Communauté de Travail des Pyrénées/ Journées EDPs et Applications. Laboratoire MIP, Toulouse (France), September 29th - October 2nd 2005.
- Oberwolfach Conference "Classical and Quantum Mechanical Models of Many-Particle Systems", Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach (Germany), December 3rd – 9th 2006.
- Dipartimento di Fisica, Università di Pisa (Italy), June 14th 2007.
- Conference "Probabilistic Methods in Kinetic Theory", CIRM Luminy, Marseille (France), July 11th-15th 2011.
- Workshop "Third Minho Meeting on Mathematical Physics", Centro de Matemática (Dep. de Matemática e Aplicações), Universidade do Minho, Braga (Portugal), November 4th 2011
- GDT Homogenization et échelles multiples, Laboratoire Jacques Louis Lions, CNRS-ParisVI-ParisVII, Paris (France), February 6th 2012.
- Minisymposium "Asymptotic Analysis and Homogenization" at 7th European Conference on Elliptic and Parabolic Problems, Gaeta (Italy), May 21st - 25th 2012.
- Meeting "Particle systems and PDE's", Centro de Matemática (CMAT), Universidade do Minho, Braga (Portugal), December 5th-7th 2012
- Journées CMLA - EDP 2013, Centre de Mathématiques et des Leurs Applications (CMLA), ENS Cachan, France, June 3rd-5th 2013.
- Meeting "Particle systems and PDE's II", Centro de Matemática (CMAT), Universidade do Minho, Braga (Portugal), December 12th-13th 2013
- Workshop "Problems on Kinetic Theory and PDE's", Department za Matematiku i Informatiku, University of Novi Sad, Novi Sad (Serbia), September 25th-27th 2014
- Meeting "Particle systems and PDE's III", Centro de Matemática (CMAT), Universidade do Minho, Braga (Portugal), December 17th-19th 2014
- Assemblea Scientifica Nazionale GNFM, Montecatini Terme (Italy), October 21st-23rd 2015
- Meeting "Particle systems and PDE's IV", Centro de Matemática (CMAT), Universidade do Minho, Braga (Portugal), December 16th-18th 2015
- Congresso Nazionale SIMAI2016 - Bi-annual congress of the Italian Society of Industrial and Applied Mathematics (SIMAI 2016), Politecnico di Milano, Milan (Italy), 13-16/9/2016
- Meeting "Particle systems and PDE's V", Centro de Matemática (CMAT), Universidade do Minho, Braga (Portugal) 28-30/11/2016

- Meeting "Particle systems and PDE's VI", Laboratoire Jean-Alexandre Dieudonné, Université de Nice Sophia Antipolis, Nice (France) 27/11-1/12/2017

- Assemblea Scientifica Nazionale GNFM, Montecatini Terme (Italy), October 4th-6th 2018

- Meeting "Particle Systems and PDE's VIII", Instituto Superior Técnico, University of Lisbon, Lisbon (Portugal), 2-6 December 2019

- Workshop "The Mathematical Theory of Particle Suspensions", Institute for Applied Mathematics, Hausdorff Center for Mathematics, Bonn (Germany), 20-22 January 2020

- Meeting "Particle Systems and PDE's IX", Centro de Matemática (CMAT), Universidade do Minho, Braga (Portugal), 19-23 July 2021

- Meeting "Particle Systems and PDE's X", Centro de Matemática (CMAT), Universidade do Minho, Braga (Portugal), 27 June-1 July 2022

- Workshop "Regulatory models and principles to handle and rule Artificial Intelligence in the

European and Asia-Pacific Area", Università LUM Giuseppe Degennaro, Casamassima (Bari,Italy), 12-14 July 2023

-Workshop "Mathematical Justification for the Kinetic and Fluid Equations of Plasmas and Self-Gravitating Systems", CIRM, Luminy-Marseille (France), 24-28 July 2023

-Meeting "Particle Systems and PDE's XI" , Instituto Superior Técnico, University of Lisbon,Lisbon (Portugal), 6-10 November 2023

-Minisymposium "Asymptotic analysis of PDEs" at "International Conference on Elliptic and Parabolic Problems: GAETA 2024 ", Gaeta (Italy), 20-24 May 2024

-Conference "Legge, volontà e intelligenza artificiale: poteri, diritti, doveri e responsabilità", Università LUM Giuseppe Degennaro, Casamassima (Bari,Italy), 6-8 November 2024

AMBITI DI RICERCA

kinetic and hydrodynamic partial differential equations, asymptotic limits of particle systems, mathematical modelling of gases and plasmas, radiative transfer, applied mathematics, mathematical physics.

ALTRE ATTIVITA

Languages: Italian (native), English, French, German