Curriculum Vitae:

Nato a Roma il 17/09/1986

Diploma al Liceo Scientifico Statale "Nomentano", con votazione 100/100

Laurea triennale in Fisica presso l'Università di Roma "La Sapienza", con la dissertazione in Fisica Nucleare e Subnucleare, relatore prof. C. Bini: "Misura dell'anomalia del momento magnetico del muone: rassegna storica e prospettive", con votazione 104/110.

Laurea Magistrale in Fisica presso l'Università La Sapienza, con una tesi in Fisica Matematica, relatore prof. C. Marchioro: " Localizzazione e stabilità del campo scalare attivo in meccanica dei fluidi", con votazione 110/110

Research Topics: Mathematical Physics, Mathematical Fluid Mechanics, Fractional Differential Equations and Applications, Random motions at finite velocity

Pubblicazioni:

- R. Garra. E. Orsingher, Random flights governed by Klein-Gordon-type partial differential equations, *Stochastic Processes and their Applications*, Volume 124, Issue 6, 2171-2187, (2014)
- R. Garra, E. Orsingher, F. Polito, Fractional Klein-Gordon equations and related stochastic processes, *Journal of Statistical Physics*, Volume 155, Issue 4, pp 777-809, (2014)
- L. Beghin, R. Garra, C. Macci, Correlated fractional counting processes on a finite time interval, accepted by *Journal of Applied Probability*
- M. D'Ovidio, R. Garra, Multidimensional fractional advection-dispersion equations and related stochastic processes. *Electronic Journal of Probability*, 19(61), 1-31, (2014)
- R.Garra, E. Orsingher, F. Polito, State-dependent Fractional Point Processes, accepted by *Journal of Applied Probability*, (2014)
- R. Garra, R.Gorenflo, F. Polito, Z. Tomovski, Hilfer-Prabhakar Derivatives and Some Applications, *Applied Mathematics and Computation*, Vol. 242, 576-589, (2014)
- R.Garra, A. Giusti, F.Mainardi, F.Pagnini, Fractional relaxation with time-varying coefficient, *Fractional Calculus and Applied Analysis*, Volume 17, Issue 2, pp 424-439 , (2014)
- F. Falcini, A. Piliouras, R. Garra, A. Guerin, D. J. Jerolmack, J. Rowland and C. Paola, Hydrodynamic and suspended sediment transport controls on river mouth morphology, *Journal of Geophysical Research: Earth Surface*, 119(1), (2014)
- Z. Tomovski, R. Garra, Analytic solutions of fractional integro-differential equations of Volterra type with variable coefficients , *Fractional Calculus and Applied Analysis,* 17(1), 38-60, (2014)
- V. Voller, F. Falcini, R.Garra, Fractional Stefan problems exhibiting lumped and distributed latent heat memory effects, *Phys.Rev. E*, 87 (4), 042401, (2013)
- R.Garra, Localization of point vortices under curvature perturbations, *MEMOCS (Mathematics and Mechanics of Complex Systems*), 1(1), 19-31, (2013)
- G. Cavallaro, R. Garra, C. Marchioro, Localization and stability of active scalar flows, *Rivista di Matematica dell'Università di Parma,* 4(1), 175-196, (2013)
- R. Garra, F. Polito, On Some Operators Involving Hadamard Derivatives, *Integral Transform and Special Functions,* 1-10, (2013)
- R.Garra, P. Artale Harris, Analytic solution of nonlinear fractional Burgers-type equation by invariant subspace method, *Nonlinear Studies*, 20(4), 471-481, (2013).

- R. Garra, E. Salusti, Application of the nonlocal Darcy law to the propagation of nonlinear thermoelastic waves in fluid saturated porous media, *Physica D*, 250, 52–57, (2013)
- D. Baleanu, R. Garra, I. Petras, A fractional variational approach to the fractional Basset-type equation, *Reports in Math Phys*., 72 (1), 57-64, (2013)
- R. Garra, Inviscid limit of the dissipative active scalar flow, *Reports in Math Phys*. 70 (1), 51-63, (2012)
- R. Garra, F. Polito, Coupled systems of fractional equations related to sound propagation: analysis and discussion, *J. Math. Physics,* 53, 043502, (2012)
- G.Casasanta, D. Ciani, R.Garra, Non exponential extinction of radiation by fractional calculus modelling, *Journal of Quantitative Spectroscopy & Radiative Transfer,* 113, 194–197, (2012)
- R. Garra, F. Polito, Fractional calculus modelling for unsteady unidirectional flow of incompressible fuids with time-dependent viscosity, *Comm. Nonlin. Sc. And Num. Sim.,* 17(12), 5073–5078, (2012)
- R. Garra, F. Polito, Analytic solutions of fractional differential equations by operational methods, *Appl. Math and Comp*, 218(21), 10642–10646, (2012)
- R. Garra, Analytic solution of a class of fractional differential equations with variable coefficients by operatorial methods, *Comm. Nonlin. Sc and Num. Sim*, 17 1549–1554, (2012)
- R. Garra, F. Polito, A note on fractional linear pure birth and pure death processes in epidemic models, *Physica A*, Vol. 390 (21-22), 3704-3709, (2011)
- R.Garra, Fractional calculus model for temperature and pressure waves in fluid-saturated porous rocks, *Phys. Rev E*, 84, 036605, (2011)

Proceedings:

- R. Garra, E. Orsingher, F.Polito, Fractional Klein-Gordon equation for linear dispersive phenomena: analytical methods and applications, *IEEE Xplore*, International Conference on Fractional Differentiation and its Applications, (2014)
- R. Garra, E. Orsingher, Finite velocity planar random motions driven by inhomogeneous fractional Poisson distributions, *Proceedings of 8th international conference on applied mathematics,* (ASM '14), (2014)

Preprints:

-R.Garra, E.Orsingher, Random flights related to the Euler-Poisson-Darboux equation, arXiv:1411.0648

-R.Garra, E.Orsingher, F.Polito, Fractional diffusions with time-varying coefficients, arXiv:1501.04806

Referee for: Annales de l'Institut Henri Poincaré (B), Mathematical Methods in the Applied Sciences, Fractional Calculus and Applied Analysis (FCAA), Central European Journal of Physics, Journal of Applied and Computational Mathematics, Abstract and Applied Analysis, Journal of Mathematical Analysis and Applications, Nonlinear Dynamics, Journal of the Egyptian Mathematical Society, Le Matematiche, Thermal Science

Reviewer for Mathscinet.

Membro di redazione della rivista internazionale *Progress in Fractional Differentiation and Applications* e della rivista di divulgazione Accastampato (http://www.accastampato.it/).

Grants:

Responsabile del progetto di avvio alla ricerca 2013 finanziato dalla Sapienza dal titolo: *Equazioni differenziali non lineari a derivate frazionarie: metodi analitici ed applicazioni in fisica.*

Talks and seminars:

1. Fractional Klein-Gordon equation and related stochastic processes, Dipartimento di fisica Università di Bologna "*Alma Mater Studiorum*", Novembre 2013

2. Fractional Klein-Gordon equation for linear dispersive phenomena: analytical methods and applications, ICFDA'14 - International Conference on Fractional Differentiation and its Applications. Catania, June 2014

3. Fractional Klein--Gordon equation and related processes, First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI, Special session Mathematical Aspects and Applications of Fractional Differential Equations, Bilbao, July 2014
4. Some applications of special functions to population dynamics, ICFDA'12 - International Conference on Fractional Differentiation and its Applications. Nanjing (China), May 2012
5. Finite velocity planar random motions driven by inhomogeneous fractional Poisson distributions, 8th international conference on applied mathematics, (ASM '14)
6. Fractional diffusions with time-varying coefficients, Workshop on "Fractional calculus and applications", Dipartimento di Matematica, Università di Roma 3

Esperienze didattiche

Attivita' di tutoraggio per i corsi di Analisi e Geometria per i corsi di Ingegneria dei Sistemi Informatici ed Ingegneria elettronica presso la Facoltà di Ingegneria dell'Informazione, Informatica e Statistica dell'Università La Sapienza di Roma (assegno di tipo A2) nell'A.A. 2012/13

Attivita' di tutoraggio per i corsi di Analisi 1 per i corsi di Ingegneria Informatica ed Ingegneria Gestionale presso la Facoltà di Ingegneria dell'Informazione, Informatica e Statistica dell'Università La Sapienza di Roma (assegno di tipo A2) nell'A.A. 2013/14

Attivita' di tutoraggio per i corsi di Analisi 2 per Ingegneria Aerospaziale presso la Facoltà di Ingegeneria Civile ed Industriale dell'Università La Sapienza di Roma nell'A.A. 2013/14

Roma 19/03/15