CURRICULUM VITAE

Margherita Nolasco
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Academic Positions and Qualifications

- Current position (since Apr. .2021): *Professore Ordinario* (SSD MAT/05), DISIM-Department (previously Facoltà di Scienze MM.FF.NN.) Università dell'Aquila (Italy).
- Nov. 2001 - Apr. 2021: *Professore Associato* (SSD MAT/05), DISIM-Department (previously Facoltà di Scienze MM.FF.NN.) Università dell'Aquila (Italy).
- *Full Professor - National Scientific Qualification ASN 2012* (01/A3).
- Nov.1997 - Oct.2001: *Ricercatore* (A02 A-Math. Analysis), Facoltà di Scienze MM.FF.NN. Università dell'Aquila (Italy).

Postdoc fellowships

- *INDAM senior* fellowship for research activity at the *Università di Roma "Tor Vergata"* (Italy) [used only for 6 months, 1997].

- CNR fellowship for research activity at the *Università di Roma "La Sapienza" (Italy)* [1 year-1996/97].

- EC network project: *Human Capital and Mobility Programme* for research activity at a network of European Institutions. [6 months 1995/96].

Higher Studies

- *Ph.D. in Functional Analysis and applications*, International School for Advanced Studies ISAS- SISSA Trieste, Italy (1995).

- *Magister Ph. in Mathematical Physics* - International School for Advanced Studies ISAS-SISSA Trieste, Italy (1993).

- *Degree in Physics*, Università di Milano, Italy (1991).

Visiting Positions

- *Visiting professor* at the Universidad de Chile (Santiago, Chile), [1 month, October 2009], invited by Prof. M. Del Pino.

- *Visiting researcher* at the University of Wisconsin (Madison - USA) [2 months (2000)], invited by Prof. P. Rabinowitz (CNR-NATO project).

- *Visiting Postdoc* at the École Polytechnique Fédérale de Lausanne (EPFL Suisse), [2 months, 1996] invited by Prof. C. Stuart (EC network).

- *Visiting Postdoc* at the Universidad de Granada (Spain), [2 months,1996] invited by Prof. D. Arcoya (EC network).

- *Visiting Postdoc* at the Bath University (UK), [2 months (1995)], invited by Prof. J. Toland (EC network).

- Visiting Ph.D. student at the Math.Dep. University of Toronto (Canada) [6 months (1993/1994)], invited by Prof. I.M. Sigal.

Publications

(1) Nolasco, M. *A normalized solitary wave solution of the Maxwell-Dirac equations* Ann.Inst.H. Poincaré (C) Anal.NonLin.
DOI 10.1016/j.anihpc.2020.12.006

(2) Coti Zelati,V.; Nolasco,M. *Ground state for the relativistic one electron atom in a self-generated electromagnetic field* SIAM J.Math.Anal. 51 (2019) n.3, 2206-2230.

(3) Coti Zelati,V.; Nolasco, M.*Pohozaev identity and Virial Theorem for the Dirac - Coulomb operator* J. Fixed Point Theory Appl.19 (2017) n.1, 601-615.

(4) Coti Zelati, V.; Nolasco, M. *A variational approach to the Brown-Ravenhall operator for the relativistic one-electron atoms* Nonlinear Anal.136 (2016), 62-83.

(5) Coti Zelati, V. ; Nolasco, M. *A variational approach to the eigenfunctions of the one particle relativistic Hamiltonian* J. Elliptic Parabol. Equ. 1 (2015), pp. 89- 108 (special volume: 8th European Conference on Elliptic and Parabolic Problems, Gaeta 2014).

(6) Coti Zelati, V.; Nolasco, M. *Ground states for pseudo-relativistic Hartree equations of critical type* Rev. Mat. Iberoam. 29 (2013), n. 4, 1421-1436.

(7) Coti Zelati, V. ; Nolasco, M. *Ground states for pseudo-relativistic equations with combined power and Hartree-type nonlinearities* Recent trends in nonlinear partial differential equations. II. Stationary problems, 151-167 Contemp. Math., 595, Amer. Math. Soc., (2013).

(8) Coti Zelati, V.; Nolasco, M. *Existence of ground states for nonlinear pseudo-relativistic Schrödinger equations* Rend. Lincei Mat.Appl. 22 (2011), n.1, 51-72.

(9) Nolasco, M. *Breathing modes for the Schroedinger-Poisson system with a multiple–well external potential* Comm. Pure App. Anal. 9 (2010) n.5, 1411-1419.

(10) Macrì, M.; Nolasco, M. *Stationary solutions for the non-linear Hartree equation with a slowly varying potential* NoDEA Nonlinear Differential Equations Appl. 16 (2009) n.6, 681-715.

(11) Macrì, M.; Nolasco, M. *Uniqueness of topological solutions for a class of self-dual vortex theories* Proc. Roy Soc. Edinburgh Sect. A 137 (2007) n. 4, 847-866.

(12) Macrì, M. ; Nolasco, M. *Existence and asymptotics for self-dual periodic vortices of topological-type* Proceedings of Equadiff 11, (Bratislava 2005), Ed.: M.Fila, et al. (2007).

(13) Macrì, M.; Nolasco, M.; Ricciardi,T. *Asymptotic for self-dual vortices on the torus and on the plane: a gluing technique* SIAM J. Math. Anal. 37 (2005) n.1, 1-16.

(14) Nolasco, M. *Nontopological N-Vortex Condensates for the Self-Dual Chern-Simons Theory* Comm. Pure Appl. Math. CPAM 56 (2003) n.12, 1752-1780.

(15) Lucia, M.; Nolasco, M. *SU(3) Chern- Simons vortex theory and Toda systems* J. Differential Equations JDE 184 (2002) n.2, 443-474..

(16) Nolasco, M.; Tarantello, G. *Vortex condensates for the SU(3) Chern-Simons theory* Comm. Math. Phys. 213 (2000) n.3, 599-639.

(17) Coti Zelati, V. ; Nolasco, M. *Multibump solutions for rapidly forced Hamiltonian systems* Boll. Unione Mat.Ital. (8) B-2 (1999) n.3, 585-608.

(18) Nolasco, M.; Tarantello,G. *Double vortex condensates in the Chern-Simons-Higgs theory* Calc. Var. Partial Differential Equations 9 (1999) n.1, 31-94.

(19) Montecchiari,P.; M. Nolasco, M.; Terracini, S. *A global condition for periodic Duffing-like equations* Trans. Amer. Math. Soc. 351 (1999) n.9, 3713-3724.

(20) Coti Zelati, V.; Montecchiari, P. ;Nolasco, M. *Almost periodic solutions for a class of Duffing-like systems* Differential Integral Equations, 11 (1998) n.4, 623-640.

(21) Nolasco, M.; Tarantello, G. *On a sharp Sobolev type inequality on two dimensional compact manifolds* Arch. Ration. Mech. Anal. 145 (1998) n.2, 161-195.

(22) Cingolani, S.; Nolasco, M. *Multi-peak periodic semiclassical states for a class of nonlinear Schrödinger equations* Proc. Roy Soc. Edinburgh Sect. A 128 (1998) n.6, 1249-1260.

(23) Caldiroli,P.; Nolasco, M. *Multiple homoclinic solutions for a class of autonomous singular systems in $\mathbb{R}^2$* Ann.Inst.H. Poincaré Anal.NonLin., 15 (1998) n.1,113-125.

(24) Montecchiari, P.; Nolasco, M.; Terracini, S. *Multiplicity of homoclinics for a class of time recurrent second order Hamiltonian systems* Calc. Var. Partial Differential Equations, 5 (1997) n.6, 523-555.

(25) Coti Zelati, V.; Montecchiari, P.; Nolasco, M. *Multibump homoclinic solutions for a class of second order, almost periodic Hamiltonian systems* NoDEA Nonlinear Differential Equations Appl. 4 (1997) n.1, 77-99.

(26) Montecchiari, P.; Nolasco, M. *Multibump solutions for perturbations of periodic second order Hamiltonian systems* Nonlinear Anal. 27 (1996) n.12, 1355-1372.

(27) Caldiroli, P.; Montecchiari, P.; Nolasco, M. *Asymptotic behavior for a class of multibump solutions to Duffing–like systems* Variational and local methods in the study of Hamiltonian system (Trieste, 1994), World Scientific (1995) pp. 137-145.

Conferences, Workshops and Talks

- **A complete list, starting in 2013**

  - Talk at the Università di Roma *Tor Vergata* (Roma, 2021).

  - Talk at GSSI (L'Aquila, 2020).

  - Talk at the Università di Roma *Tor Vergata* (Roma, 2020).

  - Invited speaker at the conference: *Variational methods, with applications to problems in mathematical physics and geometry* (Venezia, Italy, 2019).

  - Talk at the Università Politecnica delle Marche (Ancona, Italy, 2019).

  - Invited speaker at the Congreso Bienal de la Real Sociedad Matematica Espanola - Sesion Especial : *Avances recientes en mecanica cuantica relativista* [proposed and funded by L. Vega] (RSME Santander, Spain, 2019).

  - Invited to the Workshop: *Physical, Geometrical and Analytical Aspects of Mean Field Systems of Liouville Type* (BIRS Banff, Canada 2018).

  - Invited speaker at the conference: *A day in Nonlinear Analysis* (Napoli, Italy, 2017).

  - Invited speaker at the conference: *Linear and nonlinear Dirac equation: Advances and open problems* (Como, Italy, 2017).

  - Invited speaker at the XX congresso UMI, [session proposed by M. Procesi] (Siena, Italy, 2015).

  - Talk at the Università di Roma "Tor Vergata" (Italy, 2014).

  - Talk at the Gran Sasso Science Institute (GSSI - L'Aquila, Italy 2014).

  - Talk at the Università di Roma Tre (Italy, 2013).

- **A selection of older events**

  - Invited speaker at the *Second meeting of Women of the Laplacian* (Monopoli, Italy 2010).

  - Invited speaker at the *Sixth European Conference on Elliptic and Parabolic Problems* [session proposed by M. Del Pino] (Gaeta, Italy 2009).

  - Talk at the Universidad de Chile (Santiago, Chile, 2009).

  - Invited speaker at the conference: *Equadiff 11* [session proposed by P. Rabinowitz] (Bratislava, Slovakia 2005).

  - Invited speaker at the conference: *A Week End in Nonlinear Analy-sis* (Roma, Italy 2001).

  - Talk at the University of Wisconsin (Madison-USA, 2000).

  - Invited speaker at the conference: *Variational Methods and Diffe-rential Equations of Mathematical Physics* Scuola Normale Superiore SNS (Pisa, Italy 1998).

  - Talk at the Scuola Normale Superiore (SNS - Pisa, Italy 1996).

  - Talk at the Ècole Polytech. Fèd. de Lausanne EPFL (Switzerland,1996).

  - Talk at the Bath University (UK, 1996).

Funded Research Projects

- GNAMPA[1] 2020 project: *Equazioni di Choquard con vincolo di massa* (PI prof. R. Molle).

- PRIN[2] advanced 2015 *Variational methods, with applications to problems in mathematical physics and geometry* (PI prof. A. Malchiodi).

- PRIN advanced 2012 *Variational and perturbative aspects of nonlinear differential problems* (PI prof. S.Terracini).

- PRIN 2009 *Sistemi Hamiltoniani infinito dimensionali e Equazioni alle derivate parziali* (PI prof. S.Terracini).

- *International Cooperation Project Fondecyt 2009* (Chile)
  (PI Prof. M. Del Pino).

- GNAMPA 2008 project: *Soluzioni intere per equazioni semilineari ellittiche* (PI Prof. P. Montecchiari).

- ***In charge*** of a Research collaboration grant (1 year) - title: *Analisi di fenomeni multiscala per equazioni differenziali nonlineari.* University of L'Aquila (2007).

- CNR-NATO senior grant (***Holder***) (2000).

- GNAMPA-GNFM[3] project (2003/04): *Equazioni dispersive della fisica matematica , aspetti teorici e numerici* (PI. prof. A.Teta).

- GNAMPA-GNFM project (2002/03): *Equazioni dispersive della fisica matematica , aspetti teorici e numerici* (PI prof. V. Georgiev).

- PRIN 2006 *Esistenza e proprietà qualitative di soluzioni di problemi ellittici nonlineari* (PI prof. A. Ambrosetti).

- PRIN 2004 *Problemi Differenziali nonlineari di tipo ellittico ed Hamiltoniano e loro applicazioni* (PI prof. A. Ambrosetti).

- PRIN 2002 *Problemi ellittici nonlineari nello studio dei vortici nella teoria dei campi di gauge* (PI prof. A. Ambrosetti).

- PRIN 2000 n*Problemi ellittici nonlineari e applicazioni alla teoria dei vortici* (PI prof. A. Ambrosetti).

- PRIN 1998 *Problemi Ellittici nonlineari* (PI prof. A. Ambrosetti).

August 05, 2021

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[1]Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni.
[2]Scientific Research Programs of Relevant National Interest MIUR
[3]Gruppo Nazionale per la Fisica Matematica.