

Europass Curriculum Vitae

Personal information

Name	Alberto Boscaggin
Work address	Department of Mathematics, University of Torino via Carlo Alberto 10, 10123 Torino, Italy
E-mail	alberto.boscaggin@unito.it

Current position

July 2024 - present	Full Professor in Mathematical Analysis, Department of Mathematics, University of Torino
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Past positions

March 2021 - June 2024	Associate Professor in Mathematical Analysis, Department of Mathematics, University of Torino
March 2018 - February 2021	Assistant Professor (tenured) in Mathematical Analysis, Department of Mathematics, University of Torino
November 2017 - February 2018	Research Fellow, Department of Mathematics, University of Torino
November 2014 - October 2017	Assistant Professor (untenured) in Mathematical Analysis, Department of Mathematics, University of Torino
January 2014 - October 2014	Post-doc, Department of Mathematics and Applications, University of Milano-Bicocca
January 2013 - December 2013	Post-doc, Department of Mathematics, University of Torino

Qualifications

November 9, 2020	Abilitazione scientifica nazionale – prima fascia, SC 01/A3, SSD MAT/05 (italian qualification for full professorship in Mathematical Analysis)
March 28, 2017	Abilitazione scientifica nazionale – seconda fascia, SC 01/A3, SSD MAT/05 (italian qualification for associate professorship in Mathematical Analysis)
October 26, 2012	Ph.D. in Mathematical Analysis, SISSA - International School for Advanced Studies, Trieste Title of the thesis: <i>Periodic solutions to planar Hamiltonian systems: high multiplicity and chaotic dynamics</i> Supervisor: Prof. F. Zanolin
July 24, 2008	Master Degree in Mathematics, University of Torino Graduation mark: 110/110 cum laude et mentione Title of the thesis: <i>Global bifurcation and topological invariants for nonlinear boundary value problems</i> Supervisor: Prof. A. Capietto
July 18, 2006	Bachelor Degree in Mathematics, University of Torino Graduation mark: 110/110 cum laude Title of the thesis: <i>Topological degree theory in finite dimension and applications</i>

July 4, 2003

Fellowships and awards

Supervisor: Prof. A. Capietto

Scientific high school degree, Liceo Scientifico Tecnologico "E. Ferrari", Torino
Graduation mark: 100/100 cum laude

Supported by the Italian grant FFABR (Fondo per il finanziamento di base delle attività di ricerca) in the category "Researchers", 2017

"CELMEC Article Prize 2017" - Prize for the best original research paper with young coauthor on Celestial Mechanics and Astrodynamics, CELMEC VII

Ph.D. fellowship, SISSA, 2008-2011

"Medaglia d'Argento 2008" - Prize for the best Master Degree Thesis in Mathematics, University of Torino

Bachelor degree fellowship, Istituto Nazionale di Alta Matematica "F. Severi" INDAM, 2003-2006

Research activity

I am interested in Differential Equations, Dynamical Systems, Nonlinear Analysis.

Below is a summary of the main themes I worked on:

- Equations of Celestial Mechanics: parabolic and hyperbolic solutions for N-centre and N-body type problems; generalized periodic solutions for forced Kepler problems; periodic solutions for forced Kepler problems in special relativity; *Tools*: smooth and non-smooth critical point theory, regularization techniques, symplectic methods.
- ODEs with indefinite weight: positive solutions to boundary value problems, subharmonic solutions, chaotic dynamics; *Tools*: topological degree theory, critical point theory, shooting and phase-plane arguments, topological horseshoes theory.
- Planar and low-dimensional Hamiltonian systems: periodic solutions (harmonic and subharmonic) to planar Hamiltonian systems and applications (pendulum equation, Ambrosetti-Prodi problems, fluid mixing); bifurcation of periodic solutions for perturbed central force problems in the plane; *Tools*: planar and higher-dimensional Poincaré-Birkhoff fixed point theorem, Conley-Zehnder index theory.
- Semilinear elliptic PDEs: solutions with symmetry (radial, axially symmetric, etc) to boundary value problems in bounded and unbounded domains; *Tools*: shooting method, critical point theory in invariant cones.

Publications

Preprint

Regular articles

A. Boscaggin, F. Colasuonno, B. Noris and T. Weth, *Multiplicity and symmetry breaking for supercritical elliptic problems in exterior domains*, submitted, arXiv:2309.03029

A. Boscaggin, W. Dambrosio and G. Feltrin, *Bifurcation of closed orbits of Hamiltonian systems with application to geodesics of the Schwarzschild metric*, submitted, arXiv:2310.02615

A. Boscaggin, G. Feltrin and D. Papini, *Nearly-circular periodic solutions of perturbed relativistic Kepler problems: the fixed-period and the fixed-energy problems*, submitted, arXiv:2405.11189

- To appear
- A. Boscaggin, W. Dambrosio and G. Feltrin, *Prescribed energy periodic solutions of Kepler problems with relativistic corrections*, submitted, arXiv:2303.00336
- A. Boscaggin, W. Dambrosio and D. Papini, *Periodic solutions to relativistic Kepler problems: a variational approach*, Ann. Sc. Norm. Super. Pisa Cl. Sci., online first
- A. Boscaggin, W. Dambrosio and D. Papini, *Unbounded solutions to a system of coupled asymmetric oscillators at resonance*, J. Dynam. Differential Equations, online first
- 2024
- A. Boscaggin, W. Dambrosio and G. Feltrin, *Periodic perturbations of central force problems and an application to a restricted 3-body problem*, J. Math. Pures Appl. **186**, 31–73
- A. Boscaggin, W. Dambrosio and D. Papini, *Infinitely many periodic solutions to a Lorentz force equation with singular electromagnetic potential*, J. Differential Equations **383**, 190–213
- 2023
- A. Boscaggin, F. Colasuonno, B. Noris and T. Weth, *A supercritical elliptic equation in the annulus*, Ann. Inst. H. Poincaré Anal. Non Linéaire **40**, 157–183.
- A. Boscaggin, W. Dambrosio and E. Muñoz-Hernández, *A Maupertuis-type principle in relativistic mechanics and applications*, Calc. Var. Partial Differential Equations **62**, 29 pp.
- A. Boscaggin, G. Feltrin and F. Zanolin, *Positive solutions for a Minkowski-curvature equation with indefinite weight and super-exponential nonlinearity*, Commun. Contemp. Math. **25**, 20 pp.
- A. Boscaggin and E. Muñoz-Hernández, *Planar Hamiltonian systems: index theory and applications to the existence of subharmonics*, Nonlinear Anal. **226**, 35 pp.
- 2022
- A. Boscaggin, W. Dambrosio and D. Papini, *Unbounded solutions to systems of differential equations at resonance*, J. Dynam. Differential Equations **34**, 637–650
- 2021
- A. Boscaggin, F. Colasuonno and C. De Coster, *Multiple bounded variation solutions for a prescribed mean curvature equation with Neumann boundary conditions*, J. Differential Equations **285**, 607–639
- A. Boscaggin, W. Dambrosio and G. Feltrin, *Periodic solutions to a perturbed relativistic Kepler problem*, SIAM J. Math. Anal. **53**, 5813–5834.
- A. Boscaggin, W. Dambrosio, G. Feltrin and S. Terracini, *Parabolic orbits in Celestial Mechanics: a functional-analytic approach*, Proc. Lond. Math. Soc. (3) **123**, 203–230
- A. Boscaggin, G. Feltrin and F. Zanolin, *Uniqueness of positive solutions for boundary value problems associated with indefinite φ -Laplacian type equations*, Open Math. **19**, 163–183.
- 2020
- V. Barutello, A. Boscaggin and W. Dambrosio, *On the minimality of Keplerian arcs with fixed negative energy*, Qual. Theory Dyn. Syst. **19**
- A. Boscaggin, F. Colasuonno and B. Noris, *A priori bounds and multiplicity of positive solutions for p -Laplacian Neumann problems with sub-critical growth*, Proc. Roy. Soc. Edinburgh Sect. A, **150** 73–102
- A. Boscaggin, F. Colasuonno and B. Noris, *Positive radial solutions for the Minkowski-curvature equation with Neumann boundary conditions*, Discrete Contin. Dyn. Syst. Ser. S, DOI 10.3934/dcdss.2020150
- A. Boscaggin, W. Dambrosio and D. Papini, *Periodic solutions to a forced Kepler problem in the plane*, Proc. Amer. Math. Soc. **148**, 301–314
- A. Boscaggin and G. Feltrin, *Pairs of positive radial solutions for a Minkowski-curvature Neumann problem with indefinite weight*, Nonlinear Anal. **196**, 111807
- A. Boscaggin and G. Feltrin, *Positive periodic solutions to an indefinite Minkowski-curvature equation*, J. Differential Equations **269**, 5595–5645.
- A. Boscaggin, G. Feltrin and E. Sovrano, *High multiplicity and chaos for an indefinite problem arising from genetic models*, Adv. Nonlinear Stud. **20**, 675–699.

- A. Boscaggin, A. Fonda and M. Garrione, *An infinite-dimensional version of the Poincaré-Birkhoff theorem on the Hilbert cube*, Ann. Sc. Norm. Super. Pisa Cl. Sci. **20**, 751–770.
- 2019 A. Boscaggin and M. Garrione, *A counterexample to a-priori bounds under the Ahmad-Lazer-Paul condition*, Rend. Istit. Mat. Univ. Trieste **51**, 33–39
A. Boscaggin and M. Garrione, *Pairs of nodal solutions for a Minkowski-curvature boundary value problem in a ball*, Commun. Contemp. Math. **21**, 18 pp.
A. Boscaggin, R. Ortega and L. Zhao, *Periodic solutions and regularization of a Kepler problem with time-dependent perturbation*, Trans. Amer. Math. Soc. **372**, 677–703
- 2018 A. Boscaggin, A. Bottois and W. Dambrosio, *The spatial N -centre problem: scattering at positive energies*, Calc. Var. Partial Differential Equations **57**, 23 pp.
A. Boscaggin, F. Colasuonno and B. Noris, *Multiple positive solutions for a class of p -Laplacian Neumann problems without growth conditions*, ESAIM Control Optim. Calc. Var. **24**, 1625–1644
A. Boscaggin, W. Dambrosio and D. Papini, *Parabolic solutions for the planar N -centre problem: multiplicity and scattering*, Ann. Mat. Pura Appl. (4) **197**, 869–882
A. Boscaggin and G. Feltrin, *Positive subharmonic solutions to nonlinear ODEs with indefinite weight*, Commun. Contemp. Math. **20**, 26 pp.
A. Boscaggin, G. Feltrin and F. Zanolin, *Positive solutions for super-sublinear indefinite problems: high multiplicity results via coincidence degree*, Trans. Amer. Math. Soc. **370**, 791–845
- 2017 A. Boscaggin, W. Dambrosio and D. Papini, *Multiple positive solutions to elliptic boundary blow-up problems*, J. Differential Equations **262**, 5990–6017
A. Boscaggin, W. Dambrosio and S. Terracini, *Scattering parabolic solutions for the spatial N -centre problem*, Arch. Ration. Mech. Anal. **223**, 1269–1306
- 2016 A. Boscaggin, G. Feltrin and F. Zanolin, *Pairs of positive periodic solutions of nonlinear ODEs with indefinite weight: a topological degree approach for the super-sublinear case*, Proc. Roy. Soc. Edinburgh Sect. A **146**, 449–474
A. Boscaggin and M. Garrione, *Multiple solutions to Neumann problems with indefinite weight and bounded nonlinearities*, J. Dynam. Differential Equations **28**, 167–187
A. Boscaggin and M. Garrione, *Positive solutions to indefinite Neumann problems when the weight has positive average*, Discrete Contin. Dyn. Syst. **36**, 5231–5244
A. Boscaggin and M. Garrione, *Resonant Sturm-Liouville boundary value problems for differential systems in the plane*, Z. Anal. Anwend. **35**, 41–59
A. Boscaggin and R. Ortega, *Periodic solutions of a perturbed Kepler problem in the plane: from existence to stability*, J. Differential Equations **261**, 2528–2551
- 2015 V. Barutello, A. Boscaggin and G. Verzini, *Positive solutions with a complex behavior for superlinear indefinite ODEs on the real line*, J. Differential Equations **259**, 3448–3489
A. Boscaggin and W. Dambrosio, *Highly oscillatory solutions of a Neumann problem for a p -laplacian equation*, Nonlinear Anal. **122**, 58–82
A. Boscaggin, W. Dambrosio and D. Papini, *Asymptotic and chaotic solutions of a singularly perturbed Nagumo-type equation*, Nonlinearity **28**, 3465–3485
A. Boscaggin and F. Zanolin, *Second order ordinary differential equations with indefinite weight: the Neumann boundary value problem*, Ann. Mat. Pura Appl. (4) **194**, 451–478
- 2014 A. Boscaggin and W. Dambrosio, *A note on the existence of multiple solutions for a class of systems of second order ODEs*, J. Math. Anal. Appl. **415**, 610–622
A. Boscaggin and R. Ortega, *Monotone twist maps and periodic solutions of systems of Duffing type*, Math. Proc. Cambridge Philos. Soc. **157**, 279–296
A. Boscaggin, R. Ortega and F. Zanolin, *Subharmonic solutions of the forced pendulum equation: a symplectic approach*, Arch. Math. (Basel) **102**, 459–468

- 2013 A. Boscaggin and M. Garrione, *Planar Hamiltonian systems at resonance: the Ahmad-Lazer-Paul condition*, NoDEA Nonlinear Differential Equations Appl. **20**, 825–843
A. Boscaggin and P.J. Torres, *Periodic motions of fluid particles induced by a prescribed vortex path in a circular domain*, Phys. D **261**, 81–84
A. Boscaggin and F. Zanolin, *Pairs of nodal solutions for a class of nonlinear problems with one-sided growth conditions*, Adv. Nonlinear Stud. **13**, 13–53
A. Boscaggin and F. Zanolin, *Subharmonic solutions for nonlinear second order equations in presence of lower and upper solutions*, Discrete Contin. Dyn. Syst. **33**, 89–110
- 2012 A. Boscaggin, *One-signed harmonic solutions and sign-changing subharmonic solutions to scalar second order differential equations*, Adv. Nonlinear Stud. **12**, 445–463
A. Boscaggin, *Periodic solutions to superlinear planar Hamiltonian systems*, Port. Math. **69**, 127–140
A. Boscaggin, A. Fonda and M. Garrione, *A multiplicity result for periodic solutions of second order differential equations with a singularity*, Nonlinear Anal. **75**, 4457–4470
A. Boscaggin and F. Zanolin, *Pairs of positive periodic solutions of second order nonlinear equations with indefinite weight*, J. Differential Equations **252**, 2900–2921
A. Boscaggin and F. Zanolin, *Positive periodic solutions of second order nonlinear equations with indefinite weight: multiplicity results and complex dynamics*, J. Differential Equations **252**, 2922–2950
- 2011 A. Boscaggin, *A note on a superlinear indefinite Neumann problem with multiple positive solutions*, J. Math. Anal. Appl. **377**, 259–268
A. Boscaggin, *Subharmonic solutions of planar Hamiltonian systems: a rotation number approach*, Adv. Nonlinear Stud. **11**, 77–103
A. Boscaggin and M. Garrione, *Resonance and rotation numbers for planar Hamiltonian systems: multiplicity results via the Poincaré-Birkhoff theorem*, Nonlinear Anal. **74**, 4166–4185
- 2010 A. Boscaggin and M. Garrione, *A note on a linear spectral theorem for a class of first order systems in \mathbb{R}^{2N}* , Electron. J. Qual. Theory Differ. Equ. **75**, 22 pp.
- Proceedings (research papers)**
- 2020 A. Boscaggin, F. Colasuonno and B. Noris, *Multiplicity of solutions for the Minkowski-curvature equation via shooting method*, Bruno Pini Mathematical Analysis Seminars **11**, 1–17.
- 2013 A. Boscaggin and M. Garrione, *Sign-changing subharmonic solutions to unforced equations with singular ϕ -Laplacian*, Differential and Difference Equations with Applications, Springer Proceedings in Mathematics and Statistics **47**, 321–329
- 2009 A. Boscaggin and A. Capietto, *Infinitely many solutions to superquadratic planar Dirac-type systems*, Discrete Contin. Dyn. Syst., Dynamical Systems, Differential Equations and Applications, 7th AIMS Conference, 72–81
- Proceedings (survey papers)**
- 2016 A. Boscaggin, *Positive periodic solutions to nonlinear ODEs with indefinite weight: an overview*, Rend. Sem. Mat. Univ. Politec. Torino, Bruxelles-Torino Talks in PDEs (Turin, May 2-5, 2016), **74** (2016), 71 – 80
- 2011 A. Boscaggin, *Subharmonic solutions of planar Hamiltonian systems via the Poincaré-Birkhoff theorem*, Matematiche (Catania) **66**, 115–122
- Lecture Notes**
- 2013 A. Boscaggin, A. Capietto and W. Dambrosio, *The Maslov index and global bifurcation for nonlinear boundary value problems*, Stability and bifurcation theory for non-autonomous differential equations (Cetraro, 2011), Lecture Notes in Math. **2065**, Springer, Berlin, 1–34

Invited talks in conferences

- December 18-19, 2023 "Nonlinear Meeting in Milan 2023", Milano - Italy
Title: *The relativistic Kepler problem: a paradigm for dynamical systems and nonlinear analysis*
- June 12-14, 2023 "Nonlinear Partial Differential Equations and Dynamical Systems", Madrid - Spain
Title: *Periodic perturbations of central force problems*
- November 4, 2022 "Autumn afternoon in Nonlinear Analysis", Udine - Italy
Title: *Periodic solutions to relativistic Kepler problems*
- October 13, 2022 "International meeting in Nonlinear Analysis", Madrid - Spain
Title: *Periodic solutions to relativistic Kepler problems*
- July 4-6, 2022 "Portugal-Italy Conference on Nonlinear Differential Equations and Applications", Evora - Portugal
Title: *Periodic solutions to the relativistic Kepler problem: a variational approach*
- June 19-24, 2022 "Geometric and Variational Methods in Celestial Mechanics", online
Title: *Periodic solutions to relativistic Kepler problems*
- December 22, 2021 "DEG1 Christmas Meeting", online
Title: *Periodic perturbations of central force problems*
- November 26, 2021 "Online Workshop on Topological Methods in Nonlinear Analysis", online
Title: *Multiple bounded variation solutions for a prescribed mean curvature equation with Neumann boundary conditions*
- July 19-23, 2021 "Mathematical Congress of the Americas 2021", online
Title: *Parabolic orbits in Celestial Mechanics: a functional-analytic approach*
- July 12-16, 2021 "Encontro Nacional SPM 2021", online
Title: *Multiple bounded variation solutions for a prescribed mean curvature equation with Neumann boundary conditions*
- September 16-20, 2019 "Dynamics, Equations and Applications (DEA 2019)", Kracow - Poland
Title: *Generalized periodic solutions to perturbed Kepler problems*
- September 10-11, 2019 "Non-Autonomous Dynamical Systems and Applications", Ancona - Italy
Title: *Generalized periodic solutions to perturbed Kepler problems*
- September 2-7, 2019 "XXI Congresso Unione Matematica Italiana", Pavia - Italy
Title: *Generalized periodic solutions to perturbed Kepler problems*
- November 8-9, 2018 "Workshop on dynamical systems, calculus of variations and control", Firenze - Italy
Title: *Scattering parabolic solutions for the N -centre problem*
- March 28-30, 2018 "Mini-workshop on Extra-Ordinary Differential Equations", Foz do Arelho - Portugal
Title: *Periodic solutions to perturbed Kepler problems*
- December 11-15, 2017 "Intensive week of PDEs at Spa", Spa - Belgium
Title: *Periodic solutions to second order ODEs: from variational methods to dynamics*
- Jan. 31 - Feb. 3, 2017 "New Directions in Nonautonomous Dynamical Systems", Firenze - Italy
Title: *Scattering parabolic solutions for the N -centre problem in the three-dimensional space*
- October 28-29, 2016 "3rd Weekend on Variational Methods and Differential Equations", Catania - Italy
Title: *Scattering parabolic solutions for the N -centre problem in the space*
- June 20-23, 2016 "Convegno Scientifico GNAMPA 2016", Montecatini Terme - Italy

- Title: *A singularly perturbed Nagumo-type equation: from boundary value problems to symbolic dynamics*
- May 2-5, 2016 “Bru-To PDE’s Conference”, Torino - Italy
Title: *Positive solutions to indefinite ODEs: high multiplicity and chaotic dynamics*
- September 7-12, 2015 “XX Congresso Unione Matematica Italiana”, Siena - Italy
Title: *ODEs with indefinite weight: from oscillatory solutions to constant-sign solutions*
- May 29, 2015 “Mini-workshop on Dynamical Systems”, Udine - Italy
Title: *Subharmonic solutions of the forced pendulum equation: a dynamical approach*
- July 7-11, 2014 “The 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications”, Madrid - Spain
Title: *Boundary value problems for second order ODEs with indefinite weight*
Title: *Periodic solutions of second order ODEs: a symplectic approach*
- June 20-21, 2013 “Giornate fiorentine su dinamica non autonoma e metodi topologici in equazioni differenziali”, Firenze - Italy
Title: *Periodic solutions of superlinear systems of ODEs: a symplectic approach*
- Jan. 30 - Feb. 1, 2013 “Qualitative Theory of Nonlinear Differential Equations 2013”, Trieste - Italy
Title: *Pairs of solutions to supersublinear boundary value problems*
- July 1-5, 2012 “The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications”, Orlando - Florida - USA
Title: *Positive solutions to second order ODEs with indefinite weight: multiplicity and complex dynamics*
- April 16-17, 2012 “Topological and Variational Methods in Differential Equations”, Torino - Italy
Title: *Periodic solutions to planar Hamiltonian systems via the Poincaré-Birkhoff fixed point theorem*

Talks in conferences

- June 18-22, 2018 “Perspectives in Hamiltonian Dynamics”, Venezia - Italy
Titolo: *Periodic solutions to perturbed Kepler problems*
- September 3-9, 2017 “CELMEC VII - The Seventh International Meeting on Celestial Mechanics”, San Martino al Cimino - Italy
Titolo: *Scattering parabolic solutions for the N -centre problem in the three-dimensional space*
- January 23-26, 2017 “Nonlinear Meeting in Udine 2017”, Udine - Italy
Title: *Differential equations with solutions in pairs: an overview*
- July 4-8, 2011 “International Conference on Differential and Difference Equations and Applications”, Ponta Delgada - Acores - Portugal
Title: *Positive periodic solutions of second order nonlinear ODEs with indefinite weight*
- September 15-17, 2010 “International Conference on Ordinary Differential Equations and Applications - ODEA 2010”, Ancona - Italy
Title: *Subharmonic solutions of planar Hamiltonian systems*
- April 14-16, 2010 “International Workshop on Variational, Topological and Set-valued Methods for Nonlinear Differential Problems”, Messina - Italy
Title: *Subharmonic solutions of planar Hamiltonian systems: a rotation number approach*

Invited seminars

April 26, 2023	<i>Periodic solutions to relativistic Kepler problems</i> , University of Torino
February 17, 2021	<i>Multiple BV solutions for a prescribed mean curvature equation</i> , online webinar
January 20, 2020	<i>From Kepler to Einstein: survival issues</i> , online webinar
December 20, 2019	<i>Differential equations with solutions in pairs: the story goes on</i> , University of Udine
December 3, 2019	<i>Generalized periodic solutions to perturbed Kepler problems</i> , University of Roma Tor-Vergata
May 22, 2018	<i>Periodic solutions to perturbed Kepler problems</i> , Politecnico of Milano
March 26, 2018	<i>Periodic solutions to perturbed Kepler problems</i> , University of Torino
July 3, 2017	<i>Positive solutions to indefinite ODEs: high multiplicity and chaotic dynamics</i> , University of Amiens
May 29, 2017	<i>Scattering parabolic solutions for the N-centre problem in the three-dimensional space</i> , University of Venezia
January 17, 2017	<i>Scattering parabolic solutions for the N-centre problem in the three-dimensional space</i> , University of Bruxelles
December 6, 2016	<i>Scattering parabolic solutions for the N-centre problem in the three-dimensional space</i> , University of Milano Bicocca
May 30, 2016	<i>Periodic solutions to perturbed Kepler problems: from existence to stability</i> , SISSA
April 1, 2014	<i>Twist maps and periodic solutions to systems of ODEs</i> , University of Milano Bicocca
November 13, 2013	<i>Second order differential equations with indefinite weight: the Neumann problem</i> , University of Torino
November 6, 2013	<i>The Neumann problem for ODEs with indefinite weight: existence and multiplicity</i> , University of Granada
July 11, 2013	<i>Periodic solutions of superlinear systems of ODEs</i> , University of Trieste
May 29, 2013	<i>The Neumann problem for ODEs with indefinite weight: existence and multiplicity</i> , University of Marche
March 20, 2013	<i>Pairs of nodal solutions to supersublinear boundary value problems</i> , University of Milano Bicocca
November 19, 2012	<i>Pairs of solutions to supersublinear boundary value problems</i> , University of Granada
October 9, 2012	<i>An introduction to ODEs with indefinite weight: from sign-changing solutions to positive solutions</i> , University of Trieste
December 22, 2011	<i>Complex dynamics for second order ODEs with indefinite weight</i> , University of Torino
December 20, 2010	<i>The Poincaré-Birkhoff fixed point theorem and applications to ordinary differential equations</i> , University of Torino
July 6, 2010	<i>The Poincaré-Birkhoff fixed point theorem and applications to ordinary differential equations</i> , University of Trieste

Research visits

2013 - present	University of Udine, University of Trieste (many short visits)
July 3-7, 2017	University of Amiens, Department of Mathematics
January 16-20, 2017	University of Bruxelles, Department of Mathematics
July 4-8, 2016	University of Bruxelles, Department of Mathematics

June 13-18, 2016	University of Granada, Department of Applied Mathematics
November 4-8, 2013	University of Granada, Department of Applied Mathematics
Nov. 12 - Dec. 7, 2012	University of Granada, Department of Applied Mathematics

Projects

As principal investigator

2020	GNAMPA project "Problemi ai limiti per l'equazione della curvatura media prescritta"
2015	GNAMPA project "Equazioni differenziali ordinarie sulla retta reale"

As member

2023	GNAMPA project "Analisi qualitativa di problemi differenziali nonlineari" (P.I. G. Feltrin, University of Udine)
2019	GNAMPA project "Il modello di Born-Infeld per l'elettromagnetismo nonlineare: esistenza, regolarità e molteplicità di soluzioni" (P.I. F. Colasuonno, University of Torino)
2017	GNAMPA project "Dinamiche complesse per il problema degli N -centri" (P.I. W. Dambrosio, University of Torino)
2016	GNAMPA project "Problemi differenziali non lineari: esistenza, molteplicità e proprietà qualitative delle soluzioni" (P.I. M. Garrione, University of Milano-Bicocca)
2014 - 2019	ERC Advanced Grant "Complex Patterns for Strongly Interacting Dynamical Systems - COMPAT" (P.I. S. Terracini, University of Torino)
2012	GNAMPA project "Problemi al contorno per equazioni differenziali nonlineari" (P.I. F. Obersnel, University of Trieste)
2011	GNAMPA project "Soluzioni periodiche di alcune classi di equazioni differenziali ordinarie" (P.I. F. Obersnel, University of Trieste)
2010	GNAMPA project "Equazioni differenziali e applicazioni" (P.I. P. Omari, University of Trieste)

Organizations of scientific activities

September 11-13, 2023	<i>Differential equations and Dynamics in Alba, Alba</i> (co-organizers W. Dambrosio, G. Feltrin and D. Papini; invited talks by 15 experts in the fields of Dynamical Systems and Nonlinear Analysis) Web-page: https://deg1.uniud.it/deda2023/
December 14-16, 2022	<i>A 3-day workshop in Hamiltonian Systems and Celestial Mechanics, Torino</i> (co-organizers V. Barutello, G. Canneori and I. De Blasi; invited talks by 15 experts in the fields of Hamiltonian Systems and Celestial Mechanics) Web-page: https://sites.google.com/view/3hscm22/home
June 7-9, 2021	INdAM Workshop <i>Nonlinear Phenomena: between ODEs and PDEs</i> , online workshop (co-organizers F. Colasuonno and B. Noris; invited talks by 22 experts in the field of Nonlinear Analysis) Web-page: https://sites.google.com/view/nop2020/home
June 24-28, 2019	<i>New Trends in Celestial Mechanics, Cogne</i> (co-organizers V. Barutello, G. Canneori and W. Dambrosio; invited talks by 33 experts in the field of Celestial Mechanics) Web-page: https://sites.google.com/view/ntcm2019
Jan. 31 - Feb 1, 2019	<i>Nonlinear Meeting in Turin 2019, Torino</i> (co-organizers F. Colasuonno and G. Feltrin; invited talks by L. Brasco, M. Grossi, A. Malchiodi, S. Mosconi, R. Musina, B. Noris)

- December 18-19, 2017 Web-page: <https://sites.google.com/view/nlmt2019>
Miniworkshop in Celestial Mechanics, Torino (co-organizers V. Barutello and W. Dambrosio; invited talks by A. Celletti, T. Dondè, J. Montaldi, A. Simões, G. Yu, L. Zhao)
- July 11-12, 2016 Web-page: <https://sites.google.com/view/mwcm17turin/home>
Nonlinear Meeting in Milan 2016, Milano (co-organizer M. Garrione; invited talks by V. Barutello, M. Berti, A. Fonda, M. Ghimenti, M. Tarallo and G. Tarantello)
- November 24-27, 2015 Web-page: <https://sites.google.com/site/nonmil16/home>
Autumn School on ODEs and Dynamical Systems, Torino (mini-courses by T. Bartsch, D. Offin and R. Ortega)
- June 16-17, 2015 Web-page: <https://sites.google.com/site/asodys2015/home>
Nonlinear Meeting in Turin 2015, Torino (co-organizer M. Garrione; invited talks by M.J. Esteban, M. Franca, F. Gazzola, P. Montecchiari, S. Terracini and F. Zanolin)
- Web-page: <https://sites.google.com/site/nlmt2015/home>

Referee activity

Referee for *Advanced Nonlinear Studies*, *Boundary Value Problems*, *Bulletin of the London Mathematical Society*, *Communications on Pure and Applied Analysis*, *Discrete and Continuous Dynamical Systems B*, *Electronic Journal of Qualitative Theory of Differential Equations*, *Electronic Journal of Differential Equations*, *Journal of Dynamics and Differential Equations*, *Journal of Differential Equations*, *Journal of Mathematical Analysis and Applications*, *Mathematische Nachrichten*, *Nonlinear Analysis TMA*, *Nonlinear Analysis RWA*, *NoDEA*, *Nonlinearity*, *Proceedings of the American Mathematical Society*, *Proceedings on the Royal Society of Edinburgh*, *ZAMP*

Reviewer for Zentralblatt MATH

Teaching activity

Ph.D. courses

- 2016-2017 *Topological Methods in Nonlinear Analysis*, Ph.D in Pure and Applied Mathematics, University of Torino and Politecnico of Torino

Post-graduate Master courses

- 2019-2020 *Celestial Mechanics and Astrodynamics*, Master “Mathematical and Physical Methods for Space Sciences”, University of Torino

Degree courses

- 2023-2024 Teacher of the course *Mathematical Analysis 1*, Degree in Physics, University of Torino
 Teacher of the course *Mathematical Analysis*, Degree in Computer Science, University of Torino
 Teacher of the course *Advanced Analysis*, Master Degree in Mathematics, University of Torino
- 2022-2023 Teacher of the course *Mathematical Analysis 1*, Degree in Physics, University of Torino
 Teacher of the course *Mathematical Analysis*, Degree in Computer Science, University of Torino
 Teacher of the course *Advanced Analysis*, Master Degree in Mathematics, University of Torino
- 2021-2022 Teacher of the course *Mathematical Analysis 1*, Degree in Physics, University of Torino

	Teacher of the course <i>Mathematical Analysis</i> , Degree in Computer Science, University of Torino
	Teacher of the course <i>Differential Equations and Nonlinear Analysis</i> , Master Degree in Mathematics, University of Torino
2020-2021	Teacher of the course <i>Mathematical Analysis 1</i> , Degree in Physics, University of Torino
	Teacher of the course <i>Mathematical Analysis</i> , Degree in Computer Science, University of Torino
	Teacher of the course <i>Differential Equations and Nonlinear Analysis</i> , Master Degree in Mathematics, University of Torino
2019-2020	Teacher of the course <i>Mathematical Analysis 1</i> , Degree in Physics, University of Torino
	Teacher of the course <i>Differential Equations and Nonlinear Analysis</i> , Master Degree in Mathematics, University of Torino
	Teaching Assistant of the course <i>Mathematical Analysis</i> , Degree in Computer Science, University of Torino
2018-2019	Teacher of the course <i>Advanced Analysis</i> , Master Degree in Mathematics, University of Torino
	Teacher of the course <i>Differential Equations and Nonlinear Analysis</i> , Master Degree in Mathematics, University of Torino
	Teacher of the course <i>Mathematics I</i> , Degree in Chemistry, University of Torino
2017-2018	Teaching Assistant of the course <i>Mathematical Analysis</i> , Degree in Computer Science, University of Torino
2016-2017	Teaching Assistant of the course <i>Mathematical Analysis</i> , Degree in Computer Science, University of Torino
	Teaching Assistant of the course <i>Mathematical Analysis</i> , Degree in Optics and Optometry, University of Torino
2015-2016	Teaching Assistant of the course <i>Mathematical Analysis</i> , Degree in Computer Science, University of Torino
2014-2015	Teaching Assistant of the course <i>Mathematical Analysis</i> , Degree in Computer Science, University of Torino
2013-2014	Teaching Assistant of the course <i>Mathematical Analysis</i> , Degree in Optics and Optometry, University of Torino

Thesis advisor

2021	G. Fissore (master)
2020	S. Marchese (bachelor)

Linguistic skills

Italian, mother tongue
English, fluent
Spanish, elementary