MONICA CONTI

Associate Professor of Mathematical Analysis

Personal Data
Born on February 22, 1969 in Lecco, Italy
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Education
(1993) Degree in Mathematics, University of Milan
(1998) PhD in Mathematics, University of Milan

Academic Career
(1999) Post-doc position in Calculus of Variations, University of Milano-Bicocca
(1999-2010) Assistant Professor of Mathematical Analysis MAT/05, Politecnico of Milan.

Teaching: Courses of Calculus, Differential Equations, Real and Functional Analysis

Textbooks: Cohautor of *Analisi Matematica* published by Apogeo (Milan, 2007) for undergraduate courses in Calculus (two volumes).

Research Fields: Partial differential equations of elliptic type; existence and multiplicity of solutions; critical point theory; variational methods in nonlinear analysis; optimal partition problems and strongly competing systems of PDE's; asymptotic behavior of dynamical systems associated with evolution equations of hyperbolic and parabolic type; memory relaxation of evolution equations.

Scientific Publications:

1. M. Conti, *Walking around mountains*, Rendiconti Istituto Lombardo, Sc. Mat. e Appl. A 128 (1994), 53-70

2. M. Conti, R. Lucchetti, *The minimax approach to the critical point theory*, in "Recent Developements in Well-Posed Variational Problems", R. Lucchetti-J. Revalski (eds.), Kluwer Academic Publishers, 1995, 29-76

3. M. Conti, F. Gazzola, *Positive entire solutions of quasilinear elliptic problems via nonsmooth critical point theory.* Topological Methods in Nonlinear Analysis 8 (1996), 275-294

4. M. Conti, S. Crotti, D. Pardo, *On the existence of positive solutions for a class of singular elliptic equations.* Advances in Differential equations 3 (1998), 111-132

5. M. Conti, L. Merizzi, S. Terracini, *Remarks on variational methods and lower–upper solutions.* Nonlinear Differential Equations and applications NoDEA 6 (1999), 371-393

6. M. Conti, L. Merizzi, S. Terracini, *On the existence of many solutions for a class of elliptic systems.* Journal of Differential equations 167, (2000) 357-387

7. M. Conti, L. Merizzi, S. Terracini, *Radial solutions of superlinear equations on R^N. Part I: a global variational approach.* Arch. Rational Mech. Anal. 153 (2000), 291-316

8. M. Conti, S. Terracini, *Radial solutions of superlinear equations on R^N. Part II: the forced case.* Arch. Rational Mech. Anal. 153 (2000), 317-339

9. M. Conti, F. Gazzola, *Existence of ground states and free boundary problems for the prescribed mean curvature equation.* Advances in Differential Equations 7 (2002), 667-694

10. M. Conti, S. Terracini, G. Verzini, *Nodal solutions to a class of nonstandard superlinear equations on $\mathbf{R}^N$.* Advances in Differential equations 7 (2002), 297–318

11. M. Conti, S. Terracini, G. Verzini, *Nehari's problem and Competing Species Systems.* Ann. Institute H.Poincarè - Analyse non linéaire 19, 6 (2002), 871-888

12. M. Conti, S. Terracini, G. Verzini, *Infinitely many solutions to fourth order superlinear periodic problems.* Transactions of the American Mathematical Society 356, 8 (2003), 3283-3300

13. M. Conti, S. Terracini, G. Verzini, *An optimal partition problem related to nonlinear eigenvalues.* Journal of Functional Analysis 198, 1 (2003), 160-196

14. M. Conti, S. Terracini, G. Verzini, *A variational problem for the spatial segregation of reaction diffusion systems.* Indiana Univ. Math. J. 54, (2005), 3, 779-815

15. M. Conti, S. Terracini, G. Verzini, *On a class of optimal partition problems related to the Fučík spectrum and to the monotonicity formulae.* Calculus of Variations 22, (2005), 1, 45-72

16. M. Conti, S. Terracini, G. Verzini, *Asymptotic estimates for the spatial segregation of competitive systems.* Advances in Mathematics 195, (2005), 2, 524-560 M.

17. M. Conti, S. Terracini, G. Verzini, *A regularity theory for optimal partition problems*, SPT 2004 – Symmetry and perturbation theory, 91–98, World Sci. Publ., Hackensack, NJ, 2005

18. M. Conti, V. Pata, M. Squassina, *Attractors for strongly damped wave equations on* $\mathbf{R}^3$ *with critical nonlinearities.* Commun. Appl. Anal. 9 (2005), no.2, 161-176

19. M. Conti, V. Pata, M. Squassina, *Singular limit of dissipative hyperbolic equations with memory.* Discrete Contin. Dyn. Syst. (2005), suppl., 200-208

20. M. Conti, G. Mola, *Attractors for a phase field model on* $\mathbf{R}^3$*.* Adv. Math. Sci. Appl. 15 (2005), 2, 527-543

21. M. Conti, V. Pata, *Weakly dissipative semilinear equations of viscoelasticity.* Commun. Pure Appl. Anal. 4 (2005), no.4, 705-720

22. M. Conti, S. Terracini, G. Verzini, *Uniqueness and least energy property to strongly competing species.* Interfaces Free Bound. 8, (2006), no. 4, 437-446

23. M. Conti, V. Pata, M. Squassina, *Singular limit of differential systems with memory.* Indiana Univ. Math. J. 55 (2006), 1, 169-215

24. M. Conti, S. Gatti, V. Pata, *Decay rates of Volterra equations on* $\mathbf{R}^{\mathbf{N}}$*.* Cent. Eur. J. Math. 5 (2007), no. 4, 720-732

25. M. Conti, S. Gatti, V. Pata, *Uniform decay properties of linear Volterra integrodifferential equations.* M3AS 18 (2008), no.1, 21-45

26. M. Conti, V. Felli, *Coexistence and Segregation for Strongly Competing Species in Special Domains.* Interfaces Free Bound. 10 (2008), 173–195

27. M. Conti, V. Felli, *Minimal coexistence configurations for multispecies systems.* Nonlinear Anal. 71 (2009) 3163–3175

28. M. Conti, G. Mola, *3–D viscous Cahn–Hilliard equation with memory* Math. Methods Appl. Sci. 32 (2009), 1370–1395

29. M. Conti, V. Pata, *On the regularity of global attractors.* Discrete Cont. Dyn. Sys, Series A 25 (2009), no. 4, 1209–1217

30. M. Conti, M. Coti Zelati, *Attractors for the Cahn–Hilliard equation with memory in 2–D.* Nonlinear Anal. 72 (2010), 1668–1682

31. M. Conti, S. Gatti, M. Grasselli, V. Pata, *Two-dimensional reaction-diffusion equations with memory.* Quart. Appl. Math. 4 (2010), 607-643

32. M. Conti, E.M. Marchini, V. Pata, *Semilinear wave equations of viscoelasticity in the minimal state framework.* Discrete Contin. Dyn. Sys., 27 (2010), no. 4, 1535–1552

33. M. Conti, V. Felli, *Global minimizers of coexistence for competing species.* J. London Math. Soc., 83 (2011), no. 3, 606-618

34. M. Conti, E.M. Marchini, *Wave equations with memory: the minimal state approach.* J. Math. Anal. Appl., 384 (2011) 607625

35. V.V Chepyzhov, M. Conti, V. Pata, *A minimal approach to the theory of global attractors.* Discrete Contin. Dyn. Sys., 32 (2012), no. 6, 2079-2088

36. M. Conti, S. Gatti, A. Miranville, *Asymptotic behavior of the Caginalp phase-field system with coupled dynamic boundary conditions.* Discrete Contin. Dyn. Sys. Series S (2012)

Preprints

- M. Conti, F. Dell'Oro, A. Miranville, *Asymptotic behavior of a generalization of the Caginalp phase-field system.* Preprint
- M. Conti, E.M. Marchini, V. Pata, *Approximating infinite delay with finite delay*. Comm. Contemporary Math., in press
- M. Conti, E.M. Marchini, V. Pata, *Exponential stability in hyperbolic heat conduction with hereditary memory*. Discrete Contin. Dyn. Sys., in press
- M. Conti, E.M. Marchini, V. Pata, *Reaction-diffusion with memory in the minimal state framework.* Preprint

Scientific Projects

- 2000-2006: Member of the project "Problemi al contorno per equazioni e sistemi differenziali: metodi e applicazioni." Co-financed by M.I.U.R. - Coordinated by A. Ambrosetti.
- 2006-2008: Member of the project "Metodi variazionali e topologici per sistemi dinamici non lineari". Co-financed by M.I.U.R. - Coordinated by A. Ambrosetti
- 2008-2010: Member of the project "Transizioni di fase, isteresi e scale multiple". Co-financed by M.I.U.R. - Coordinated by A. Visintin
- 2010: Coordinator of the project "Sistemi differenziali con memoria" financed by G.N.A.M.P.A.