CURRICULUM VITAE

BASIC INFORMATION

Name: Davide Luigi Ferrario
Plase and date of birth: Monza (Milano, Italy), August 4, 1969.
Marital status: Married, two children.
Citizenship: Italian.
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POSITIONS

10/2005–now: Associate professor of Geometry Department of Mathematics and Applications, University of Milano-Bicocca, Italy.
01/2005–09/2005: Researcher, University of Milano-Bicocca.
09/2003–12/2004: Part time secondary shool teacher of mathematics, at the vocational school IPSSCTAR *A. Olivetti* (Monza).
11/2001–07/2002: Visiting fellow at the Max-Planck-Institut für Mathematik, Bonn.
4/2000–3/2004: Post-doc researcher, Department of Mathematics of *Politecnico di Milano*.

EDUCATION

24/02/2000: PhD in Mathematics, University of Milano. Thesis at the University of Heidelberg (advisor: A. Dold).
18/04/1994: Bachelor in Mathematics, University of Milano (advisor: R.A. Piccinini).

UNIVERSITY TEACHING

2009–13: Basic geometry and topology (undergraduate level), algebraic and differential topology (graduate).
2008–09: Basic geometry and topology, homology theory (undergraduate), algebraic topology (graduate).
2005–08: Basic geometry and topology, homology theory (undergraduate).
2004–05: Geometry and topology (undegraduate). Symmetric periodic orbits for the n-body probm (PhD).

OTHER TEACHING

2005–2009: LaTeX seminars (University of Milano-Bicocca).

09/2003—12/2004: Part time teaching of mathematics at the vocational school IPSSCTAR (hotel management school) *A. Olivetti*, Monza.
12/1996—06/1997: Vocational (accounting) school "Bonomi" , Milano: part time teaching of mathematics and physics.
1992—1996: Sporadic substitution teaching in different secondary shools.

SERVICES

2003—now: Referee for *Acta Applicandae Mathematicae*, *Acta Mathematica Sinica*, *Bulletin of the London Mathematical Society*, *Celestial Mechanics and Dynamical Astronomy*, *Discrete and Continuous Dynamical Systems*, *Fixed Point Theory and Applications*, *Fundamenta Mathematicae*, *Inventiones Mathematicae*, *Journal of Differential Equations*, *Journal of Geometry and Physics*, *Matematicki Vesnik*, *Nonlinearity*, *Physics Letters A*, *Topological Methods in Nonlinear Analysis*, *Topology and its applications*, a review for *AMS Mathematical Reviews*.
2012-now: Design and organization of the mathematics part of a one-year training course for secondary school teachers (*TFA*), University of Milano-Bicocca
2009-oggi: Member of the *scientific committee*, PhD school in Pure and Applied Mathematics, University of Milano-Bicocca.
2006—2009: Member of the *Mathematical Sciences Panel*, Università di Milano—Bicocca.
03/2005—12/2007: Member of the *IT committee* of the Department of Mathematics and Applications, University of Milano-Bicocca.
02/2006—12/2006: Member of the department committee for the design and reform of the degree program in mathematics.

ORGANIZATION OF CONFERENCES

2011: *Mathematics and Computation in Music*, Paris, June 15-17, 2011 (scientific committee).
International conference on Nielsen fixed point theory and related topics, Peking, June 20-24, 2011 (scientific committee).
2010: *Group Actions in Topology and Analysis 2010*, University of Milano-Bicocca, 14-17 September, 2010.
http://peano.matapp.unimib.it/gata2010 (scientific and organizing committee).
2009: *Dynamics, Topology and Computations*, Bedlewo (Poland), 31 may - 6 june (scientific committee).
2007: *Topological Theory of Fixed and Periodic Points*, Bedlewo (scientific committee).

CONFERENCES AND INVITED SEMINARS

2013: *New Perspectives on the N-body Problem*, January 13—18, 2013, Banff International Research Station, Canada.

2012: *Montevideo Dynamical Systems Conference 2012*, August 13-17, Montevideo Uruguay (parallel session).
Workshop On Variational Methods In N-Body and Vortex Dynamics, May 28 - June 8, 2012, Lecce: mini-course *"Symmetries and the n-body problem"*

2011: *Dynamical systems and classical mechanics: a conference in celebration of Vladimir Arnold*, ICMS Edinburgh, Oct 03, 2011 - Oct 07, 2011 (no communication).
XIX Congress of the Italian Mathematical Society "U.M.I". Bologna, 12—17 september 2011 (parallel session: *nonlinear analysis and dynamical systems*).
Variational and perturbative methods for nonlinear differential equations, Venice, january 2011 (no communication).

2009: *Dynamics, Topology and Computations*, Bedlewo (Polonia), 31 may - 6 june (*plenary speaker*).
INDAM Meeting: *Theoretical and computational methods in nonlinear differential equations*, Bertinoro, 2009.09.13-18.
Nielsen Theory and Related Topics 2009, Memorial University, St. John's Newfoundland, 2009-06.
Colloquium Seminar, Dalhousie University, Halifax (Canada), 2009-06-15.
Variational Methods in Hamiltonian Systems, workshop, Max-Planck-Institut für Mathematik in den Naturwissenschaften Leipzig (Lipsia), 16-17 gennaio, 2009.

2007: *Topological Theory of Fixed and Periodic Points*, Bedlewo (Polonia), 22—28 luglio (*plenary speaker*).
University of Modena, january 17.
Symmetry and Perturbation Theory 2007, Otranto, 2—9 giugno.

2006: *Groups in Geometry and Topology*, Málaga 2006. The First Group Action Forum Conference. 4—8 settembre, Málaga, Spagna (no communication).
Mathematics and its applications, Torino July 3-7. Joint meeting of: Società Italiana di Matematica Applicata e Industriale, Société de Mathématiques Appliquées et Industrielles, Société Mathématique de France, Unione Matematica Italiana. Session: *Variational methods and differential equations*.
Université de Poitiers, 25-28 giugno. American Institute of Mathematical Sciences (AIMS) 2006 Conference. "Systèmes Dynamiques, Equations Différentielles et Applications".
22 marzo 2006, University of Pisa.

2005: *Topological and Variational Methods in PDE*, Guanajuato 2005, 5-9 december.
Celestial Mechanics CELMEC IV, San Martino al Cimino (Viterbo,

Italy), 11-16 september.
Bedlewo (Poland), 2-9 august: International conference "*Fixed point theory and its applications*".
International Symposium on *Variational Methods and Nonlinear Differential Equations*, Rome (10—14 January).

2004: *Symmetry and perturbation theory 2004*, Cala Gonone.
Joint summer meeting 2004 of the Canadian Mathematical Society and the Canadian Applied and Industrial Mathematics Society, Dalhousie University, Halifax (Canada).

2003: *Equadiff 2003*, Hasselt: parallel session *Mathematical aspects of celestial mechanics*.
Variational methods in celestial mechanics, Palo Alto, California.
National congress of the Italian Mathematical Society "UMI": session *Topologia, geometria differenziale e delle varietà analitiche complesse*.
SISSA, 22 october.

2002: *Workshop in transformation groups*, (Poznan — Poland).

2001: *Topological methods in nonlinear analysis*, (Bedlewo — Poland).

2000: *Euro-Mediterranean Topology Meeting* (Bellaterra — Spain).
Workshop *Group theory and representation theory*, in the Dipartimento di Matematica, Università di Milano—Bicocca.

1999: *Theory of Fixed Points and its Applications*, Istituto de Matematica e Estatistica (IME), Universitad do Sao Paolo, Brazil.
Spaces of Self-Homotopy Equivalences and related topics, Palazzo Feltrinelli, Gargnano (I).

1997: *Topological fixed Point Theory and Topological Methods in Nonlinear Analysis*, Cortona.
XIV International Topology Conference, Milazzo (Italy).

1996: *Dynamical Zeta functions, Nielsen theory and Reidemeister Torsion*, Warszaw (Poland).
Homotopy Theory Conference, Heidelberg, Homotopy Theory European Community Network.

1993: *Nielsen Fixed Point theory*, Cortona (Italy).

SCIENTIFIC VISITS

12-18/01/2009: Max-Planck-Institut für Mathematik in den Naturwissenschaften (Leipzig), and University of Leipzig.
11/2003: SISSA (International School for Advanced Studies), Trieste, Italy.
11-14/03/2003: Institut de mécanique céleste et de calcul des éphémerides, Paris.
11/2001—07/2002: Max-Planck-Institut für Mathematik, Bonn.
06/2001: Poznan University, Poznan (Polonia).
06/2000: Bates College (USA).

GRANTS AND PRIZES

2005—now: University research grant "FAR" University of Milano—Bicocca, group of geometry (coordinator: R. Paoletti).

2011—now: National project PRIN 2009 *Variational and topological methods for nonlinear dynamical systems*, (national project coorinator: S. Terracini). Since november 2012, I replaced S. Terracini as coordinator of the local unit, at the University of Milano-Bicocca.

2004—2009: National projects PRIN 2004, PRIN 2006 *Variational methods and nonlinear differential equations* (national project coorinator: A. Ambrosetti).

2001—2002: Ministerial grant MURST for young researchers.

11/1994—11/1999: PhD grant (suspended from 1995-03 to 1996-03, because of the military service).

05/1996: Galafassi Prize (University of Pavia): best mathematics M.S. thesis in 1994—1995.

VARIOUS

UMI: Member of the *Italian Mathematical Society*.

GNSAGA: Member of the *National group for Algebraic and Geometric structures, and their applications* (GNSAGA) of *INDAM* (National Institute of Advanced Mathematics).

Languages: Italian (native speaker), English (very good), German (sufficient), Japanese (poor).

1983—1992: Musical education: Musical "Liceo" of Monza. Exams of piano (V and VIII year), Harmony and composition, music theory, history of music.

Software: I wrote a program to manage and OMR-grade multiple choice tests for mathematics *(MCQ-XeLaTeX)*:
http://www.matapp.unimib.it/~ferrario/var/oq.html,
and for authoring and conversion of mathematics e-books, accessible for blind students *(xhtmlatex)*:
http://www.matapp.unimib.it/~ferrario/var/x.html.

03/1995—06/1996: Military service, as officer in the alpine artillery regiment (topographical officer and chief of the shooting and techical support section). Bracciano (Rome) and Trento.

PUBLICATIONS

[1] Davide L. Ferrario and Alessandro Portaluri. Dynamics of the dihedral four-body problem. *Discrete and Continuous Dynamical Systems Series S*, 2013. Accepted for publication (2012).

[2] Davide L. Ferrario. A Reidemeister trace for fibred maps. *J. Fixed Point Theory Appl.*, 10(1):113–127, 2011.

[3] Davide L. Ferrario and Renzo A. Piccinini. *Simplicial structures in topology*. CMS Books in Mathematics/Ouvrages de Mathématiques de la SMC. Springer, New York, 2011, pp. xvi+243. ISBN 978-1-4419-7235-4. Translated from the 2009 Italian original by Maria Nair Piccinini.

[4] Vivina Barutello, Davide L. Ferrario, and Susanna Terracini. On the singularities of generalized solutions to n–body type problems. *Int. Math. Res. Not. IMRN*, 2008(rnn069):1–78, 2008.

[5] Vivina Barutello, Davide L. Ferrario, and Susanna Terracini. Symmetry groups of the planar three-body problem and action-minimizing trajectories. *Arch. Ration. Mech. Anal.*, (DOI:10.1007/s00205-008-0131-7):1–38, 2008.

[6] Davide L. Ferrario. Transitive decomposition of n-body symmetry groups. In *SPT 2007–Symmetry and perturbation theory*, pp. 73–80. World Sci. Publ., Hackensack, NJ, 2008.

[7] Davide L. Ferrario and Renzo Piccinini. *Strutture simpliciali in topologia*, *volume 50 of* Quaderni dell'Unione Matematica Italiana. Pitagora Editrice, Bologna, 2008, pp. ix+270. ISBN 88-371-1773-6.

[8] Davide L. Ferrario and Alessandro Portaluri. On the dihedral n-body problem. *Nonlinearity*, 21(6):1307–1321, 2008.

[9] Davide L. Ferrario. Transitive decomposition of symmetry groups for the n-body problem. *Adv. Math.*, 213(2):763–784, 2007.

[10] Davide L. Ferrario. Planar central configurations as fixed points. *J. Fixed Point Theory Appl.*, 2(2):277–291, 2007.

[11] Davide L. Ferrario. Symmetry groups and non-planar collisionless action-minimizing solutions of the three-body problem in three-dimensional space. *Arch. Ration. Mech. Anal.*, 179(3):389–412, 2006.

[12] Davide L. Ferrario. A note on equivariant fixed point theory. In *Handbook of topological fixed point theory*, pp. 287–300. Springer, Dordrecht, 2005.

[13] Hans-Joachim Baues and Davide L. Ferrario. Homotopy and homology of fibred spaces. *Topology Appl.*, 139(1-3):63–96, 2004.

[14] Hans-Joachim Baues and Davide L. Ferrario. Stratified fibre bundles. *Forum Math.*, 16(6):865–902, 2004.

[15] Davide L. Ferrario and Susanna Terracini. On the existence of collisionless equivariant minimizers for the classical n-body problem. *Invent. Math.*, 155(2):305–362, 2004.

[16] Hans-Joachim Baues and Davide L. Ferrario. K-theory of stratified vector bundles. *K-Theory*, 28(3):259–284, 2003.

[17] Davide L. Ferrario. On the equivariant Hopf theorem. *Topology*, 42(2):447–465, 2003.

[18] Davide L. Ferrario. A Möbius inversion formula for generalized Lefschetz numbers. *Osaka J. Math.*, 40(2):345–363, 2003.

[19] Davide L. Ferrario. Self-equivalences of dihedral spheres. *Collect. Math.*, 53(3):251–264, 2002.

[20] Davide L. Ferrario. Self homotopy equivalences of equivariant spheres. In *Groups of homotopy self-equivalences and related topics (Gargnano, 1999)*, volume 274 of *Contemp. Math.*, pp. 105–131. Amer. Math. Soc., Providence, RI, 2001.

[21] Davide L. Ferrario. Making equivariant maps fixed point free. *Topology Appl.*, 116(1):57–71, 2001. Theory of fixed points and its applications (São Paulo, 1999).

[22] Davide L. Ferrario. Equivariant deformations of manifolds and real representations. *Pacific J. Math.*, 196(2):353–368, 2000.

[23] Davide L. Ferrario and Daciberg L. Gonçalves. Homeomorphisms of surfaces locally may not have the Wecken property. In *XI Brazilian Topology Meeting (Rio Claro, 1998)*, pp. 1–9. World Sci. Publ., River Edge, NJ, 2000.

[24] Davide L. Ferrario. Generalized Lefschetz numbers of pushout maps defined on non-connected spaces. In *Nielsen theory and Reidemeister torsion (Warsaw, 1996)*, volume 49 of *Banach Center Publ.*, pp. 117–135. Polish Acad. Sci., Warsaw, 1999.

[25] Davide L. Ferrario. A fixed point index for equivariant maps. *Topol. Methods Nonlinear Anal.*, 13(2):313–340, 1999.

[26] Davide Ferrario. Computing Reidemeister classes. *Fund. Math.*, 158(1):1–18, 1998.

[27] Davide Ferrario. Fixed points in bouquets of circles. *Far East J. Math. Sci.*, (Special Volume, Part II):129–136, 1997.

[28] Davide Ferrario. Generalized Lefschetz numbers of pushout maps. *Topology Appl.*, 68(1):67–81, 1996.

Teaching and popularization of mathematics

[29] Vivina Barutello, Monica Conti, Davide L. Ferrario, Susanna Terracini, and Gianmaria Verzini. *Analisi matematica. Con elementi di geometria e calcolo vettoriale Vol. 2*. Apogeo, Milano, 2008, pp. x+672. ISBN 9788850324231.

[30] Monica Conti, Davide L. Ferrario, Susanna Terracini, and Gianmari Verzini. *Analisi matematica. Dal calcolo all'analisi Vol. 1*. Apogeo, Milano, 2006, pp. x+528. ISBN 9788850322183.

[31] Davide L. Ferrario. Topologia e scelte sociali. *Emmeci quadro (Scienza Educazione e Didattica)*, (25):23–30, 2005.

[32] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Funzioni, volume A*. Ghisetti e Corvi Editori, Milano, 2001, p. 176. ISBN 88-8013-730-1.

[33] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Disequazioni algebriche, volume B*. Ghisetti e Corvi Editori, Milano, 2001, p. 239. ISBN 88-8013-731-X.

[34] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Potenze e logaritmi, volume C*. Ghisetti e Corvi Editori, Milano, 2001, p. 192. ISBN 88-8013-732-8.

[35] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Gli assi cartesiani e le trasformazioni geometriche nel piano cartesiano, volume D*. Ghisetti e Corvi Editori, Milano, 2001, p. 176. ISBN 88-8013-733-6.

[36] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: La retta e la circonferenza nel piano cartesiano, volume E*. Ghisetti e Corvi Editori, Milano, 2001, p. 368. ISBN 88-8013-734-4.

[37] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: La parabola, l'ellisse, l'iperbole nel piano cartesiano, volume F*. Ghisetti e Corvi Editori, Milano, 2001, p. 336. ISBN 88-8013-735-2.

[38] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Goniometria, volume G*. Ghisetti e Corvi Editori, Milano, 2001. ISBN 88-8013-736-0.

[39] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Equazioni, disequazioni, sistemi goniometrici, volume H*. Ghisetti e Corvi Editori, Milano, 2001. ISBN 88-8013-737-9.

[40] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Trigonometria, volume K*. Ghisetti e Corvi Editori, Milano, 2001. ISBN 88-8013-738-7.

[41] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Successioni numeriche, volume L*. Ghisetti e Corvi Editori, Milano, 2001, p. 159. ISBN 88-8013-739-5.

[42] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Limiti di una funzione, volume M*. Ghisetti e Corvi Editori, Milano, 2001, p. 224. ISBN 88-8013-740-9.

[43] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Derivata di una funzione*, *volume N*. Ghisetti e Corvi Editori, Milano, 2001, p. 207. ISBN 88-8013-741-7.

[44] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Massimi, minimi e studio di funzioni*, *volume O*. Ghisetti e Corvi Editori, Milano, 2001, p. 280. ISBN 88-8013-742-5.

[45] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Integrali*, *volume P*. Ghisetti e Corvi Editori, Milano, 2001, p. 192. ISBN 88-8013-743-3.

[46] Franca Erba, Davide L. Ferrario, and Anna Magni. *Come fare matematica: Serie numeriche. Equazioni differenziali*, *volume Q*. Ghisetti e Corvi Editori, Milano, 2001, p. 176. ISBN 88-8013-744-1.

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(D.L. Ferrario)