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*, *Forum of Mathematics: Sigma*, *Fundamenta Mathematicae*, *Inventiones Mathematicae*, *Journal of Differential Equations*, *Journal of Fixed Point Theory and Applications*, *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-now: 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: *Summer School: Mathematical methods in celestial Mechanics*, September 9-13, 2013: a series of lectures (title: Symmetries, collisions, and regularization in the variational approach to the N-body problem).
Nielsen Theory and related topics, June 24-29, 2013, National Institute for Mathematical Sciences (NIMS) Daejeon, Korea (invited speaker).
Third Workshop of the (Young) Italian Dynamicists June 11—14, 2013, Corinaldo Italy.
Applied Topology, July 21—27, 2013, Bedlewo Poland. In celebration of the 65-th birthday of Yuli Rudyak (no communication).
New Perspectives on the N-body Problem, January 13—18, 2013, Banff International Research Station, Canada (invited speaker).

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—2013: 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 Contin. Dyn. Syst. Ser. S*, 6(4):925—974, 2013.

[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 Gianmaria 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.

Free to download

[47] D.L. Ferrario. *Appunti di Geometria 1*. 2013. http://www.matapp.unimib.it/~ferrario/geo1-2013/notes-20130605.pdf (pw='0').

[48] D.L. Ferrario. *Appunti di Geometria 2*. 2013. http://www.matapp.unimib.it/~ferrario/geo2-2013/notes-20130416.pdf (pw='0') .

[49] D.L. Ferrario. *Lecture Notes on Morse Theory*. 2013. http://www.matapp.unimib.it/~ferrario/at-2013/notes-2013-06-05.pdf .

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(D.L. Ferrario)