Curriculum vitae

Giulio Fernando Schimperna
Department of Mathematics, University of Pavia
Via Ferrata 5, I-27100 Pavia, Italy

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I. Scientific activity

Personal data:

Date and place of birth: July 18, 1972, Milan (Italy)
Marital status: married, three daughters
Address: 13, via Terenzi; I-27100 Pavia; Italy
Phone: +390382576761 (home), +390382985654 (office)
Fax: +390382985602
E-mail: giusch04@unipv.it
Homepage: http://www-dimat.unipv.it/~giulio/

Current position:

• Full Professor of Mathematical Analysis, Department of Mathematics, University of Pavia (since April 2018). Head of Department (since October 2019).

Former positions:

• PostDoc at the Department of Mathematics, University of Pavia (since January 2000 until January 2001).

• Assistant Professor of Mathematical Analysis, Faculty of Sciences, University of Pavia (since February 2001 until September 2006).

• Associate Professor of Mathematical Analysis, Department of Mathematics, University of Pavia (since October 2006 until March 2018).

Studies:

• "Liceo Classico" (high school) G. Carducci of Milano (since 1985 until 1990). Bachelor diploma obtained in July 1990 with a mark of 60/60.

• Fellow of Collegio Ghislieri of Pavia (since 1990 until 1995).

• Diploma Course in Mathematics, University of Pavia (since 1990 until 1995). MSc Diploma in Mathematics obtained in January 1995 with a mark of 110/110, *cum laude*. Dissertation: "STUDIO DI UN PROBLEMA DI FRONTIERA LIBERA DI TIPO VORTICE IN SPAZI DI FUNZIONI ANALITICHE", ("Study of a vortex free boundary problem in analytic function spaces"), advisor Prof. Alessandro Torelli.

• PhD in Mathematics, University of Milan (since 1995 until 1999). PhD Diploma in Mathematics obtained in January 2000. Dissertation: "TRANSMISSION PROBLEMS FOR NONLINEAR PARABOLIC SYSTEMS OF PHASE-FIELD TYPE", advisor Prof. Gianni Gilardi.

Awards and prizes:

• Awarded of CNR grant n. 209.01.60 for students of Mathematics.

• Awarded of prize "Vittorio Emanuele Galafassi" for the best diploma thesis in

Mathematics at Pavia University in 1994-1995.

Invited talks at workshops or conferences:

• International workshop "Multiscale Problems and Phase Transitions" (WIAS - Berlin, August 29-31, 2001): "EXISTENCE AND ASYMPTOTIC RESULTS FOR SOME NONLINEAR CAHN-HILLIARD-LIKE EQUATIONS".

• National meeting: "Recenti Sviluppi nella Teoria delle Equazioni Differenziali" (Bologna, April 19-20, 2002): "PROBLEMI DI STEFAN RILASSATI PER LA TEMPERATURA ASSOLUTA".

• Scientific meeting of GNFM (Montecatini Terme, February 17-19, 2003): "UN MODELLO DI DANNEGGIAMENTO PER MATERIALI ELASTICI".

• PV-MI 2003, Seconda Giornata di Studio Università di Pavia - Politecnico di Milano "Equazioni Differenziali e Calcolo delle Variazioni" (Milano, December 11, 2003): "ATTRATTORE UNIVERSALE PER MODELLI DI PENROSE-FIFE PARABOLICI E PARABOLICI-IPERBOLICI".

• International workshop "Evolution equations: Inverse and Direct Problems" (Cortona, June 21-25, 2004): "DIRECT AND INVERSE PROBLEMS FOR CONSERVED PHASE FIELD SYSTEMS WITH MEMORY".

• International workshop "Inverse and Direct Problems" (Cortona, June 20-24, 2005): "SOME RESULTS ON DOUBLY NONLINEAR PARABOLIC PROBLEMS".

• International workshop "Dynamics of Phase Transitions" (Berlin, WIAS, November 30 - December 3, 2005): "WELL-POSEDNESS AND ω-LIMIT SETS FOR SOME DOUBLY NONLINEAR PARABOLIC PROBLEMS".

• International workshop "AIMS' Sixth International Conference on Dynamical Systems, Differential Equations and Applications" (Poitiers, June 25-28, 2006): "ATTRACTORS FOR DOUBLY NONLINEAR EQUATIONS".

• International workshop "AIMS' Sixth International Conference on Dynamical Systems, Differential Equations and Applications" (Poitiers, June 25-28, 2006): "ON THE LONG TIME BEHAVIOR OF SOME SINGULAR PHASE CHANGE MODELS".

• International workshop on "Free Boundary Problems" (Chiba, Japan, November 26-30, 2007): "HYPERBOLIC RELAXATION OF THE CAHN-HILLIARD EQUATION".

• International workshop "AIMS' Seventh International Conference on Dynamical Systems, Differential Equations and Applications" (Arlington, TX, May 18-21, 2008): "ON THE LONG TIME BEHAVIOR OF SOME VARIANTS OF THE CAHN-HILLIARD EQUATION".

• International workshop "AIMS' Seventh International Conference on Dynamical Systems, Differential Equations and Applications" (Arlington, TX, May 18-21, 2008): "ASYMPTOTIC BEHAVIOR OF SOME SINGULAR PHASE TRANSITION SYSTEMS".

• International workshop "DICOP 08 – Direct, Inverse and Control Problems for PDE's" (Cortona, September 22-26, 2008): "ON THE CAHN-HILLIARD EQUATION WITH SINGULAR POTENTIAL AND DYNAMIC BOUNDARY CONDITIONS".

• PV-MI 2008, Settima Giornata di Studio Università di Pavia - Politecnico di Milano

"Equazioni Differenziali e Calcolo delle Variazioni" (Pavia, November 28, 2008): "SUL MODELLO DI PHASE-FIELD CON CONDIZIONI AL BORDO DINAMICHE".

• International workshop "6th European Conference on Elliptic and Parabolic Problems" (Gaeta, May 25-29, 2009): "ON THE CAHN-HILLIARD MODEL WITH INERTIAL EFFECTS".

• International workshop "6th European Conference on Elliptic and Parabolic Problems" (Gaeta, May 25-29, 2009): "ON A PHASE-FIELD MODEL FOR TWO-PHASE COMPRESSIBLE FLUIDS".

• International workshop "AIMS' Eighth International Conference on Dynamical Systems, Differential Equations and Applications" (Dresden, May 25-28, 2010): "ATTRACTORS FOR REACTION-DIFFUSION SYSTEMS IN UNBOUNDED DOMAINS".

• International workshop "AIMS' Eighth International Conference on Dynamical Systems, Differential Equations and Applications" (Dresden, May 25-28, 2010): "A NONISOTHERMAL MODEL FOR NEMATIC LIQUID CRYSTALS".

• International workshop "Dissipative PDEs in Bounded and Unbounded Domains and Related Attractors" (Edinburgh, September 20-24, 2010): "ON A FOURTH ORDER DEGENERATE PARABOLIC EQUATION".

• "Week on liquid crystals" (Prague, October 5-8, 2010): "SOME NONISOTHERMAL MODELS FOR NEMATIC LIQUID CRYSTALS".

• Workshop for the 5th anniversary of the Nečas Centre (Prague, December 17, 2010) "ON SOME DOUBLY NONLINEAR GENERALIZATIONS OF THE CAHN-HILLIARD EQUATION".

• International workshop "INDI2011, Interfaces and Discontinuities in Solids, Liquids and Crystals" (Gargnano, Italy, June 20-23, 2011): "WEAK SOLUTIONS AND SMOOTHING EFFECTS FOR SOME EQUATIONS AND SYSTEMS WITH VERY-FAST DIFFUSION PROPERTIES".

• International conference on "Mathematical Models and Analytical Problems in Special Materials" (Rome, April 16-20, 2012): "ON SOME NONISOTHERMAL MODELS FOR NEMATIC LIQUID CRYSTALS".

• International conference "Structural Nonlinear Dynamics and Diagnosis – CNSDD 2012" (Marrakech, Morocco, April 30 - May 2, 2012): "ON A CLASS OF NONISOTHERMAL MODELS FOR NEMATIC LIQUID CRYSTALS".

• International workshop "PDEs for multiphase advanced materials" (Cortona, Italy, September 17-21, 2012): "ON SOME CAHN-HILLIARD MODELS WITH NONLINEAR DIFFUSION".

• International workshop "EQUADIFF 13" (Prague, August 26-30, 2013): "A NONISOTHERMAL MODEL FOR TWO-PHASE FLUIDS".

• International workshop "Recent Trends in Classical and Complex Fluids" (Brighton, September 5-7, 2013): "ON A NONISOTHERMAL MODEL FOR TWO-PHASE FLUIDS".

• International workshop "8th EU Conference on Elliptic and Parabolic Problems" (Gaeta, May 26-30, 2014): "A CLASS OF NONISOTHERMAL MODELS FOR TWO-PHASE FLUIDS".

• International workshop "Conference on Partial Differential Equations" (Novacella/Neustift, May 29 - June 1, 2014): "On a fractional Cahn-Hilliard equation".

• International workshop "Two Days Workshop on LC-Flows" (Pavia, March 24-25, 2014): "On some nonisothermal models for nematic liquid crystals".

• International workshop "RIPE 60 - Rate Independent Processes and Evolution Workshop" (Prague, June 24-26, 2014): "On a general class of doubly nonlinear equations".

• International workshop "10th AIMS International Conference" (Madrid, July 7-11, 2014): "A singular heat equation with dynamic boundary conditions".

• International workshop "Conference on Partial Differential Equations" (Munich, March 25-29, 2015): "Strongly damped wave equation with constraint".

• Indam-ERC Workshop "Special Materials in Complex Systems" (Rome, May 18-22, 2015): "On some second order equations with constraint terms".

• International workshop "Infinite-dimensional Dynamics, Dissipative Systems, and Attractors" (Nizhny Novgorod, July 13-17, 2015): "On a fractional Cahn-Hilliard equation".

• International workshop "9th European Conference on Elliptic and Parabolic Problems" (Gaeta, May 23-27, 2016): "On some Cahn-Hilliard models with singular diffusion".

• International workshop "Entropy methods, dissipative systems, and applications" (Erwin Schrödinger Institute, Vienna, June 13-17, 2016): "On some singular variants of the Cahn-Hilliard model".

• International workshop "1st Joint Meeting Brazil Italy in Mathematics" (Rio de Janeiro, August 29 - September 2, 2016): "On the fractional Cahn-Hilliard equation".

• "International Conference on Elliptic and Parabolic Problems" (Gaeta, May 22-26, 2017): "Thermodynamically consistent models for complex fluids".

• International workshop "Implicitly Constituted Materials: Modeling, Analysis and Computing" (Roztoky, July 31 - August 4, 2017): "On a thermodynamically consistent model for two-phase fluids".

• International workshop dedicated to Eduard Feireisl on the occasion of his 60th birthday (Prague, December 18, 2017): "Some results on the functionalized Cahn-Hilliard equation".

• International workshop "SMACS2018 – Special Materials and Complex Systems" (Gargnano, June 18-22, 2018): "On some long-standing questions related to damage models".

• International workshop "The 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications" (Taipei, July 5-9, 2018): "A model for complex fluids with inertial effects".

• International workshop "The 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications" (Taipei, July 5-9, 2018): "On a multi-com-

PONENT MODEL FOR TUMOR GROWTH".

• Workshop "Bilbao Workshop on Theoretical Fluid Dynamics" (Bilbao, February 27, 2019): "ON SOME MATHEMATICAL MODELS FOR TUMOR GROWTH".

• International workshop "PDEs for Biology Systems" (Sevilla, April 8-10, 2019): "ON SOME MATHEMATICAL MODELS FOR TUMOR GROWTH".

• International workshop "Recent Advances in Phase-Field Modeling: from Engineering to Biology" (Pavia, May 8-10, 2019): "ON A MODEL FOR DAMAGE".

Communications at workshops or conferences:

• International workshop "Phase Change with Convection: Modelling and Validation" (Warsaw, June 24-26, 1999): "CONVERGENCE OF PHASE-FIELD EQUATIONS TO THE STEFAN MODEL".

• XVI Congresso UMI (Naples, September 13-18, 1999): "UN PROBLEMA DI PHASE-FIELD CONSERVATO CON MEMORIA".

• International workshop "Phase Transitions and Interfaces in Evolution Equations" (S.ta Margherita Ligure, February 14-18, 2000): "SOME RESULTS ON IRREVERSIBLE PHASE CHANGE MODELS".

• National meeting "Equazioni Integrodifferenziali alle Derivate Parziali e Applicazioni" (Salò, June 23-24, 2000): "ALCUNI RISULTATI SUL MODELLO DI PHASE FIELD CONSERVATO CON MEMORIA".

• National workshop "Simmetrie, Forme Geometriche, Evoluzione, e Memoria nelle Equazioni alle Derivate Parziali" (Taormina, February 7-10, 2001): "MODELLI DI CAMPO DI FASE CONSERVATIVI CON MEMORIA".

• National workshop "Problemi a Frontiera Libera" (Montecatini, June 14-15, 2001): "ANALISI DI UN MODELLO DI SEPARAZIONE DI FASE IN LEGHE BINARIE".

• National workshop "Modelli Matematici e Problemi Analitici per Materiali Speciali" (Cortona, June 25-29, 2001): "TRANSIZIONI DI FASE IRREVERSIBILI: MODELLIZZAZIONE E RISULTATI MATEMATICI".

• International workshop "Fourth European Conference on Elliptic and Parabolic Problems - Theory and Applications" (Gaeta, September 24-28, 2001): "A PHASE CHANGE SYSTEM IN BINARY ALLOYS".

• International workshop "Free Boundary Problems: Theory and Applications" (Trento, June 5-8, 2002): "LOCAL SOLUTION TO FRÉMOND'S MODEL FOR DAMAGE IN ELASTIC MATERIALS" (poster session).

• National workshop "Modelli Matematici e Problemi Analitici per Materiali Speciali" (Salò, July 4-6, 2002): "LIMITI SINGOLARI DI UN MODELLO DI PENROSE-FIFE CON MEMORIA".

• National workshop "Free Boundary Problems in the Applied Sciences" (Montecatini Terme, April 10-11, 2003): "CONTINUOUS DEPENDENCE AND ASYMPTOTIC ANALYSIS FOR SOME SYSTEMS OF PENROSE-FIFE TYPE".

• National workshop "Materiali Speciali e Memorie: Problemi Modellistici e Analitici" (Salò, July 3-5, 2003): "ALCUNI RISULTATI SULL'EQUAZIONE DI CAHN-HILLIARD

con mobilità non costante".

• XVII Congresso UMI (Milan, September 8-13, 2003): "Esistenza dell'attratore universale per alcuni modelli di Penrose-Fife".

• International conference "FBP 2004 – Free Boundary Problems in Biomathematics, Multiscaling, Infinite-Dimensional Dynamical Systems" (Montecatini, June 10-12, 2004): "Nonisothermal phase separation models based on a microforce balance".

• "EVEQ 2004 – Sixth International Summer School on Evolution Equations (Praga, July 12-16, 2004): "Some results on PDE's systems for damaging phenomena".

• International workshop "Dissipative models in phase transitions" (Cortona, September 5-11, 2004): "Long time behavior of Caginalp's model with singular potential".

• National workshop "Modellizzazione matematica ed analisi dei problemi a frontiera libera" (Montecatini, September 29 - October 1, 2005): "On a nonlocal parabolic-hyperbolic phase field model".

• International workshop "Mathematical Models and Analytical Problems for Special Materials" (Salò, July 13-15, 2006): "Attractors for Cahn-Hilliard equations with noncostant mobility".

• XVIII Congresso UMI (Bari, September 24-29, 2007): "Rilassamento iperbolico dell'equazione di Cahn-Hilliard".

• International workshop on "Phase-field Models in Fluid Mechanics" (Regensburg, February 14-16, 2011): "On a Cahn-Hilliard model with nonlinear diffusion".

Talks given at Universities or Research institutes:

• Dipartimento di Matematica, Università di Trento (April 3, 2000): "Alcuni modelli di transizione di fase".

• IMATI-CNR, Pavia (December 7, 2000): "Modelli di separazione di fase in solidi soggetti a forze termoelastiche".

• Weierstrass Institute for Applied Analysis and Stochastics, Berlin (December 13, 2000): "Some results on phase separation models with thermoelastic effects".

• Mathematical Institute of the Academy of Sciences of the Czech Republic, Prague (March 9, 2004): "Global attractors for singular phase change systems of Penrose - Fife type".

• Département Mathématique, Université Paris Sud 11 (September 7, 2006): "Attractors for a class of doubly nonlinear equations".

• Mathematical Institute of the Charles University in Prague, Nečas Seminar on Continuum Mechanics (October 4, 2010): "On a class of fourth order degenerate parabolic equations".

• University of Kobe, Kobe Analysis Seminar (May 25, 2012): "Cahn-Hilliard

SYSTEMS WITH NONLINEAR DIFFUSION".

• Waseda University, Tokyo, Waseda University Analysis Seminar (May 26, 2012): "ON A CLASS OF NONISOTHERMAL MODELS FOR NEMATIC LIQUID CRYSTALS".

• Xi'an Jiaotong-Liverpool University, Suzhou (March 18, 2016): "ON SOME SECOND ORDER EQUATIONS WITH CONSTRAINT".

• NYU Shanghai (March 24, 2016): "ON SOME SECOND ORDER EQUATIONS WITH CONSTRAINT".

• Fudan University, Shanghai (March 29, 2016): "ON THE HYPERBOLIC RELAXATION OF THE CAHN-HILLIARD EQUATION".

• Università di Modena (July 5, 2016): "ALCUNE EQUAZIONI DEL SECONDO ORDINE CON TERMINI SINGOLARI".

• Università di Catania (June 13, 2019): "ALCUNI RISULTATI SULL'EQUAZIONE DI CAHN-HILLIARD CON DIFFUSIONE NON LINEARE".

PhD Courses or Summer Schools taught outside Pavia:

• University of Modena and Reggio Emilia, Dipartimento di Scienze Fisiche, Informatiche e Matematiche, Summer School "Dissipative Dynamical Systems and Applications", Modena, September 3-7, 2018: course on "Evolution equations with singular nonlinear terms".

• University of Vienna, Fakultät für Mathematik, March 25-29, 2019: PhD course on "Evolutionary equations with singular nonlinear terms".

Research visits:

• Weierstrass Institute for Applied Analysis and Stochastics, Berlin (December 11-17, 2000).

• Mathematical Institute of the Academy of Sciences of the Czech Republic, Prague (March 1 - May 31, 2004; July 18-24, 2005; February 9-12, 2009).

• Université Paris-Sud - Orsay (September 4-8, 2006).

• Université de Poitiers (June 1-14, 2008).

• University of Kobe (May 22 - June 1, 2012; September 22 - October 3, 2014; April 2-10, 2015).

• Fudan University, Shanghai (March 7 - April 6, 2016).

• Tohoku University, Sendai (April 11-21, 2017 and September 9-20, 2018).

• Basque Center for Applied Mathematics, Bilbao (February 25 - March 1, 2019).

Organization of workshops or conferences:

• International workshop "Evolution Problems – in memory of Brunello Terreni" (Rapallo, March 26-27, 2004): member of organizing committee.

• International workshop "Direct and Inverse Problems in Evolution Equations" (Rimini, March 17-19, 2005): member of organizing committee.

• International workshop "Phase Variations 2009" (Pavia, May 21-22, 2009): member

of organizing committee.

• International workshop "DIMO2013 – Diffuse Interface Models" (Levico Terme, September 10-13, 2013): member of organizing committee.

• International workshop "Conference on Partial Differential Equations", (Novacella/Neustift, May 29 - June 1, 2014): member of organizing committee.

• "International Conference on Elliptic and Parabolic Problems" (Gaeta, May 22-26, 2017): organizer of a Minisymposium on "Nonlinear PDEs for multiphase materials and complex fluids".

Editorial activity:

• **AIMS Mathematics**: member of Editorial Board;

• **Special volume** "Solvability, Regularity, and Optimal Control of Boundary Value Problems for PDEs. In Honour of Prof. Gianni Gilardi", Springer INdAM Series 22: member of Editorial Board.

Reviewer for the following journals:

- Advances in Differential Equations
- Annali di Matematica Pura e Applicata
- Applicable Analysis
- Applied Mathematics and Optimization
- Applications of Mathematics
- Asymptotic Analysis
- Calculus of Variations and Partial Differential Equations
- Central European Journal of Mathematics
- Communications in Mathematical Sciences
- Communications on Pure and Applied Analysis
- Computers & Mathematics with Applications
- Discrete and Continuous Dynamical Systems
- Discrete and Continuous Dynamical Systems – Series B
- Discrete and Continuous Dynamical Systems – Series S
- Electronic Journal of Differential Equations
- International Journal of Differential Equations
- Journal of Applied Mathematics
- Journal of Differential Equations
- Journal of Hyperbolic Equations
- Journal of Integral Equations and Applications
- Journal of Mathematical Analysis and Applications
- Journal of Physics A
- Journal of Statistical Physics

- Mathematical Methods in the Applied Sciences
- Mathematical Models and Methods in Applied Sciences
- Mathematische Nachrichten
- Nonlinear Analysis Series A – Theory, Methods and Applications
- Nonlinear Analysis: Real World Applications
- Set-Valued Analysis
- SIAM Journal on Mathematical Analysis
- Zeitschrift für Angewandte Mathematik und Physik.

Research projects:

• Coordinator of the GNAMPA Project 2008 "Equazioni di evoluzione nelle scienze dei materiali come sistemi dinamici infinito-dimensionali" ("Evolution equations in materials sciences as infinite-dimensional dynamical systems").

• Italian coordinator of the 2008 Project "Modelli matematici in scienza dei materiali – Modèles mathématiques en science des matériaux", in the framework of the Galileo-Galilée Italy-France scientific collaboration program (the French coordinator was Alain Miranville from Poitiers University).

• Coordinator of the GNAMPA Project 2017 "Modelli ad interfaccia diffusa per processi di crescita tumorale" ("Diffuse interface models for tumor growth processes").

III. Publications

Articles published (or in press) in peer-reviewed scientific journals

1. G. Schimperna, *Weak solution to a phase-field transmission problem in a concentrated capacity*, Math. Methods Appl. Sci., **22** (1999), 1235–1254.

2. G. Schimperna, *Some convergence results for a class of nonlinear phase-field evolution equations*, J. Math. Anal. Appl., **250** (2000), 406–434.

3. G. Schimperna, *Singular limit of a transmission problem for the parabolic phase-field model*, Appl. Math., **45** (2000), 217–238.

4. G. Schimperna, *Abstract approach to evolution equations of phase-field type and applications*, J. Differential Equations, **164** (2000), 395–430.

5. F. Luterotti, G. Schimperna, U. Stefanelli, *Existence result for a nonlinear model related to irreversible phase changes*, M^3AS – Math. Models Methods Appl. Sci., **11** (2001), 808–825.

6. P. Colli, G. Gilardi, M. Grasselli, G. Schimperna, *The conserved phase-field system with memory*, Adv. Math. Sci. Appl., **11** (2001), 265–291.

7. P. Colli, G. Gilardi, M. Grasselli, G. Schimperna, *Global existence for the conserved phase field model with memory and quadratic nonlinearity*, Portugal. Math., **58** (2001), 159–170.

8. P. Colli, F. Luterotti, G. Schimperna, U. Stefanelli, *Global existence for a class of generalized systems for irreversible phase changes*, NoDEA – Nonlinear Differential Equations Appl., **9** (2002), 255–276.

9. F. Luterotti, G. Schimperna, U. Stefanelli, *Global solution to a phase field model with irreversible and constrained phase evolution*, Quart. Appl. Math., **60** (2002), 301–316.

10. E. Bonetti, P. Colli, W. Dreyer, G. Gilardi, G. Schimperna, J. Sprekels, *On a model for phase separation in binary alloys driven by mechanical effects*, Phys. D, **165** (2002), 48–65.

11. Ph. Laurençot, G. Schimperna, U. Stefanelli, *Global existence of a strong solution to the one-dimensional full model for irreversible phase transitions*, J. Math. Anal. Appl., **271** (2002), 426–442.

12. G. Savaré, G. Schimperna, *Domain perturbations and estimates for the solutions of second order elliptic equations*, J. Math. Pures Appl., **81** (2002), 1071–1112.

13. E. Bonetti, W. Dreyer, G. Schimperna, *Global solution to a generalized Cahn-Hilliard equation with viscosity*, Adv. Differential Equations, **8** (2003), 231–256.

14. E. Rocca, G. Schimperna, *The conserved Penrose-Fife system with Fourier heat flux law*, Nonlinear Anal., **53** (2003), 1089–1100.

15. F. Luterotti, G. Schimperna, U. Stefanelli, *A generalized phase relaxation model with hysteresis*, Nonlinear Anal., **55** (2003), 381–398.

16. E. Rocca, G. Schimperna, *Singular limit of a conserved Penrose-Fife model with special heat flux law and memory effects*, Asymptot. Anal., **36** (2003), 285–301.

17. D. Kessler, J.-F. Scheid, G. Schimperna, U. Stefanelli, *Study of a system for the isothermal separation of components in a binary alloy with change of phase*, IMA J. Appl. Math., **69** (2004), 233–257.

18. E. Bonetti, G. Schimperna, *Local existence for Frémond's model of damage in elastic materials*, Contin. Mech. Thermodyn., **16** (2004), 319–335.

19. P. Colli, G. Gilardi, E. Rocca, G. Schimperna, *On a Penrose-Fife phase-field model with non-homogeneous Neumann boundary conditions for the temperature*, Differential Integral Equations, **17** (2004), 511–534.

20. E. Rocca, G. Schimperna, *Universal attractor for a Penrose-Fife system with special heat flux law*, Mediterr. J. Math., **1** (2004), 109–121.

21. G. Schimperna, U. Stefanelli, *A quasi-stationary phase field model with micro-movements*, Appl. Math. Optim., **50** (2004), 67–86.

22. E. Rocca, G. Schimperna, *Universal attractor for some singular phase transition systems*, Phys. D, **192** (2004), 279–307.

23. E. Feireisl, G. Schimperna, *Large time behaviour of solutions to Penrose-Fife phase change models*, Math. Methods Appl. Sci., **28** (2005), 2117–2132.

24. A. Miranville, G. Schimperna, *Nonisothermal phase separation based on a micro-force balance*, Discrete Contin. Dyn. Syst. Ser. B, **5** (2005), 753–768.

25. E. Bonetti, G. Schimperna, A. Segatti, *On a doubly nonlinear model for the evolution of damaging in viscoelastic materials*, J. Differential Equations, **218** (2005), 91–116.

26. A. Miranville, G. Schimperna, *Global solution to a phase transition model based on a microforce balance*, J. Evol. Equ., **5** (2005), 253–276.

27. A. Lorenzi, E. Rocca, G. Schimperna, *Direct and inverse problems for a parabolic integro-differential system of Caginalp type*, Adv. Math. Sci. Appl., **15** (2005), 227–263.

28. M. Grasselli, H. Petzeltová, G. Schimperna, *Long time behavior of solutions to the Caginalp system with singular potential*, Z. Anal. Anwend., **25** (2006), 51–72.

29. E. Rocca, G. Schimperna, *Global attractor for a parabolic-hyperbolic Penrose-Fife phase field system*, Discrete Contin. Dyn. Syst., **15** (2006), 1193–1214.

30. M. Grasselli, H. Petzeltová, G. Schimperna, *Convergence to stationary solutions for a parabolic-hyperbolic phase-field system*, Commun. Pure Appl. Anal., **5** (2006), 827–838.

31. G. Schimperna, U. Stefanelli, *Positivity of the temperature for phase transitions with micro-movements*, Nonlinear Anal. Real World Appl., **8** (2007), 257-266.

32. G. Schimperna, A. Segatti, U. Stefanelli, *Well-posedness and long-time behavior for a class of doubly nonlinear equations*, Discrete Contin. Dyn. Syst., **18** (2007), 15–38.

33. M. Grasselli, H. Petzeltová, G. Schimperna, *Asymptotic behavior of a nonisothermal viscous Cahn-Hilliard equation with inertial term*, J. Differential Equations, **239** (2007), 38–60.

34. M. Grasselli, H. Petzeltová, G. Schimperna, *A nonlocal phase-field system with inertial term*, Quart. Appl. Math., **65** (2007), 451–469.

35. G. Schimperna, *Global attractors for Cahn-Hilliard equations with nonconstant mobility*, Nonlinearity, **20** (2007), 2365–2387.

36. G. Schimperna, A. Segatti, *Attractors for the semiflow associated with a class of doubly nonlinear parabolic equations*, Asymptot. Anal., **56** (2008), 61–86.

37. G. Gilardi, A. Miranville, G. Schimperna, *On the Cahn-Hilliard equation with irregular potentials and dynamic boundary conditions*, Comm. Pure Appl. Anal., **8** (2009), 881–912.

38. A. Miranville, G. Schimperna, *Generalized Cahn-Hilliard equations for multicomponent alloys*, Adv. Math. Sci. Appl., **19** (2009), 131–154.

39. G. Schimperna, *Global and exponential attractors for the Penrose-Fife system*, M^3AS – Math. Models Methods Appl. Sci., **19** (2009), 969–991.

40. P. Colli, D. Hilhorst, F. Issard-Roch, G. Schimperna, *Long time convergence for a class of variational phase field models*, Discrete Contin. Dyn. Syst., **25** (2009), 63–81.

41. M. Grasselli, G. Schimperna, S. Zelik, *On the 2D Cahn-Hilliard equation with inertial term*, Comm. Partial Differential Equations, **34** (2009), 137–170.

42. M. Grasselli, G. Schimperna, A. Segatti, S. Zelik, *On the 3D Cahn-Hilliard equation with inertial term*, J. Evol. Eq., **9** (2009), 371–404.

43. E. Feireisl, H. Petzeltová, E. Rocca, G. Schimperna, *Analysis of a phase-field model for two-phase compressible fluids*, M^3AS – Math. Models Methods Appl. Sci., **20** (2010), 1129–1160.

44. A. Miranville, G. Schimperna, *On a doubly nonlinear Cahn-Hilliard-Gurtin system*, Discrete Contin. Dyn. Syst. Ser. B, **14** (2010), 675–697.

45. M. Grasselli, A. Miranville, G. Schimperna, *The Caginalp phase-field system with coupled dynamic boundary conditions and singular potentials*, Discrete Contin. Dyn. Syst., **28** (2010), 67–98.

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82. G. Schimperna, *Convergence of phase-field equations to the Stefan model*, Proceedings of the PCC99 ESF-AMIF Workshop (Warsaw, Poland, 24-27/6/1999), T. A. Kowalewski, F. Stella, J. Banaszek, J. Szmyd editors, IPPT-PAN Reports, **5** (1999), 131–134.

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PhD Thesis

86. G. Schimperna, Transmission Problems for Nonlinear Parabolic Systems of Phase-field Type, PhD Thesis, University of Pavia, 2000.

IV. Teaching

Teaching activity is reported by year and in reverse chronological order. All the listed courses have been taught at Pavia University.

Academic Year 2019/20 (planned):

- "ANALISI MATEMATICA 3", Diploma Course in Mathematics, 9ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2018/19:

- "ANALISI MATEMATICA 3", Diploma Course in Mathematics, 9ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2017/18:

- "ANALISI MATEMATICA 3", Diploma Course in Mathematics, 9ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2016/17:

- "VARIATIONAL METHODS FOR EVOLUTION EQUATIONS", PhD course, 16 hours.
- "ANALISI FUNZIONALE", Graduate Course in Mathematics, 9ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2015/16:

- "ANALISI FUNZIONALE", Graduate Course in Mathematics, 9ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2014/15:

- "ANALISI FUNZIONALE", Graduate Course in Mathematics, 9ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2013/14:

- "ANALISI FUNZIONALE", Graduate Course in Mathematics, 9ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2012/13:

- "COMPLEMENTI DI ANALISI MATEMATICA II", Undergraduate Course in Physics, 6ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.
- "ANALISI FUNZIONALE ED EQUAZIONI DIFFERENZIALI", Graduate Course in

Mathematics, 3ECTS.

Academic Year 2011/12:

- "EQUAZIONI DI EVOLUZIONE", Graduate Course in Mathematics, 6ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2010/11:

- "COMPLEMENTI DI ANALISI MATEMATICA II", Undergraduate Course in Physics, 6ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2009/10:

- "EQUAZIONI DI EVOLUZIONE", Graduate Course in Mathematics, 3ECTS.
- "COMPLEMENTI DI ANALISI MATEMATICA DI BASE", Diploma Course in Physics, 5ECTS.
- "MATEMATICA", Diploma Course in Biology, 6ECTS.

Academic Year 2008/09:

- "COMPLEMENTI DI ANALISI MATEMATICA DI BASE", Diploma Course in Physics, 5ECTS.
- "ISTITUZIONI DI MATEMATICHE", Diploma Course in Biology, 5ECTS.

Academic Year 2007/08:

- "INTRODUZIONE AI PROBLEMI PER EQUAZIONI ALLE DERIVATE PARZIALI", Diploma Course in Mathematics, 5ECTS.
- "ANALISI MATEMATICA D", Diploma Course in Mathematics, 3ECTS.
- "ISTITUZIONI DI MATEMATICHE", Diploma Course in Biology, 5ECTS.

Academic Year 2006/07:

- "EQUAZIONI DIFFERENZIALI E SISTEMI DINAMICI", Diploma Courses in Mathematics and in Physics.
- "ISTITUZIONI DI MATEMATICHE", Diploma Course in Biology.

Academic Year 2005/06:

- "EQUAZIONI DIFFERENZIALI E SISTEMI DINAMICI" Diploma Courses in Mathematics and in Physics.
- "ISTITUZIONI DI MATEMATICHE", Diploma Course in Biology.

Academic Year 2004/05:

- "EQUAZIONI DIFFERENZIALI E SISTEMI DINAMICI" (in collaboration with Pierluigi Colli), Diploma Courses in Mathematics and in Physics.

• "ISTITUZIONI DI MATEMATICHE", Diploma Course in Biology.

Academic Year 2003/04:

• Exercise course of "CONCETTI DI ANALISI MATEMATICA DI BASE", Diploma Courses in Mathematics and in Physics.

• "EQUAZIONI DIFFERENZIALI E SISTEMI DINAMICI", Diploma Course in Physics.

• "COMPLEMENTI DI ANALISI MATEMATICA DI BASE" (in collaboration with Daniele Boffi), Diploma Course in Physics.

Academic Year 2002/03:

• "EQUAZIONI DIFFERENZIALI E SISTEMI DINAMICI" (in collaboration with Alessandro Torelli), Diploma Course in Mathematics.

• "EQUAZIONI DIFFERENZIALI E SISTEMI DINAMICI", Diploma Course in Physics.

• "COMPLEMENTI DI ANALISI MATEMATICA DI BASE" (in collaboration with Daniele Boffi), Diploma Course in Physics.

Academic Year 2001/02:

• "STRUMENTI INFORMATICI E MATEMATICI DI BASE" (mathematical part only), Diploma Course in Mathematics.

• "EQUAZIONI DIFFERENZIALI E SISTEMI DINAMICI", Diploma Course in Physics.

Academic Year 2000/01:

• "TEORIA DELLE FUNZIONI", part 2 (in collaboration with Gianni Gilardi), Diploma Course in Mathematics.

• Exams of "ANALISI MATEMATICA II", Diploma Course in Physics.

• Exercise course of "ANALISI MATEMATICA A", Faculty of Engineering.

• Course of "MATEMATICA, FISICA E STATISTICA" (mathematical part only), Diploma Course in Sport Sciences.

Academic Year 1999/2000:

• Exercise course of "ANALISI MATEMATICA 1", Faculty of Engineering.

• Course of "MATEMATICA, FISICA E STATISTICA" (mathematical part only), Diploma Course in Sport Sciences.

Academic Year 1998/99:

• Exercise course of "ANALISI MATEMATICA 1", Faculty of Engineering.