

Cecilia Cavaterra – Curriculum Vitae

General information

- Work address: Dipartimento di Matematica "F. Enriques", Via C. Saldini 50, 20133 Milano (Italy)
- Email: cecilia.cavaterra@unimi.it
- Homepage: <http://users.mat.unimi.it/users/cecilia/>

Academic positions

- January 1, 2020 – present: Associate Professor in Mathematical Analysis at Università degli Studi di Milano (Italy).
- November 2, 1990 – December 31, 2019: Researcher (Assistant Professor) of Mathematical Analysis at Università degli Studi di Milano (Italy).

Habilitation

- Full Professor habilitation in Mathematical Analysis (ASN Prima Fascia, Settore Concorsuale 01/A3), validity May 7, 2021 – May 7, 2030.

Affiliations

- Member of Gruppo Nazionale per l'Analisi Funzionale e le sue Applicazioni (GNAMPA).
- Member of Unione Matematica Italiana (UMI).

Education

- PhD in Mathematics, Università degli Studi di Bologna (Italy), 1993, doctoral dissertation "Alcuni problemi inversi nella teoria dei materiali con memoria".
- Master degree in Mathematics, summa cum laude (110 su 110 e lode), Università degli Studi di Milano (Italy), 1986, master dissertation "Identificazione di coefficienti in equazioni iperboliche non lineari".

Fellowships

- CNR (National Research Council) fellowship at Istituto di Analisi Globale e Applicazioni, Firenze (Italy), November 1987 - November 1988.

Publications

- 1) Elena Bonetti, Cecilia Cavaterra, Francesco Freddi, Maurizio Grasselli and Roberto Natalini, "Chemomechanical degradation of monumental stones: Preliminary results" Springer INdAM Series, 41 (2021), 59-72.
- 2) Cecilia Cavaterra, Serena Dipierro, Alberto Farina, Zu Gao and Enrico Valdinoci, "Pointwise gradient bounds for entire solutions of elliptic equations with non-standard growth conditions and general nonlinearities", J. Differential Equations 270, (2021) 435-475, doi 10.1016/j.jde.2020.08.007.
- 3) Elena Beretta, Cecilia Cavaterra and Luca Ratti, "On the determination of ischemic regions in the monodomain model of cardiac electrophysiology from boundary measurements", Nonlinearity 33 (2020), no. 11, 5659-5685.
- 4) Cecilia Cavaterra, Denis Enachescu and Gabriela Marinoschi, "Sliding mode control of the Hodgkin-Huxley mathematical model", Journal Evolution Equations and Control Theory", 8 (2019), no. 4, 883-902.
- 5) Cecilia Cavaterra, Elisabetta Rocca and Hao Wu, "Long-time dynamics and optimal control of a diffuse interface model for tumor growth", Appl. Math. Optim. (2019), doi: 10.1007/s00245-019-09562-5.
- 6) Elena Bonetti, Cecilia Cavaterra, Francesco Freddi, Maurizio Grasselli and Roberto Natalini, "Existence results for a PDE system describing marble sulphation in presence of surface rugosity", Communications on Pure and Applied Analysis 18 (2019), no. 2, 977-998.
- 7) Elena Beretta, Cecilia Cavaterra, Maria Cristina Cerutti, Andrea Manzoni and Luca Ratti, "An inverse problem for a semilinear parabolic equation arising from cardiac electrophysiology", Inverse Problems 33 (2017), no. 10, 32 pp.

- 8) Cecilia Cavaterra, Elisabetta Rocca and Hao Wu, "Optimal boundary control of a simplified Ericksen-Leslie system for nematic liquid crystal flows in 2D", *Arch. Ration. Mech. Anal.* 224 (2017), no. 3, 1037-1086.
- 9) Elena Beretta, Cecilia Cavaterra, Jaime H. Ortega and Sebastian Zamorano, "Size estimates of an obstacle in a stationary Stokes fluid", *Inverse Problems* 33, (2017), no. 2, 29 pp.
- 10) Cecilia Cavaterra, Elisabetta Rocca, Hao Wu and Xiang Xu, "Global strong solutions of the full Navier-Stokes and Q-tensor system for nematic liquid crystal flows in two dimensions", *SIAM J. Math. Anal.* 48 (2016), no. 2, 1368-1399.
- 11) Cecilia Cavaterra and Davide Guidetti, "Identification of a source factor in a control problem for the heat equation with a boundary memory term", *Math. Methods Appl. Sci.* 38 (2015), no. 18, 4818-4839.
- 12) Cecilia Cavaterra, Maurizio Grasselli and Hao Wu, "Non-isothermal viscous Cahn-Hilliard equation with inertial term and dynamic boundary conditions", *Commun. Pure Appl. Anal.* 13 (2014), no. 5, 1855-1890.
- 13) Cecilia Cavaterra, Elisabetta Rocca and Hao Wu, "Global weak solution and blow-up criteria of the general Ericksen-Leslie system for nematic liquid crystal flows", *J. Differential Equations* 255 (2013), no. 1, 24-57.
- 14) Cecilia Cavaterra and Elisabetta Rocca, "On a 3D isothermal model for nematic liquid crystals accounting for stretching terms", *Z. Angew. Math. Phys.* 64 (2013) no. 1, 69-82.
- 15) Cecilia Cavaterra and Davide Guidetti, "Identification of a convolution kernel in a control problem for the heat equation with a boundary memory term", *Ann. Mat. Pura Appl.* 193 (2014) no. 3, 779-816.
- 16) Elena Beretta and Cecilia Cavaterra, "Identifying a space dependent coefficient in a reaction-diffusion equation", *Inverse Probl. Imaging* 5 (2011), no. 2, 285-296.
- 17) Cecilia Cavaterra, Ciprian G. Gal, Maurizio Grasselli and Alain Miranville, "Phase-field systems with nonlinear coupling and dynamic boundary conditions", *Nonlinear Anal.* 72 (2010), no. 5, 2375-2399.
- 18) Cecilia Cavaterra, Ciprian G. Gal and Maurizio Grasselli, "Cahn-Hilliard equations with memory and dynamic boundary conditions", *Asymptot. Anal.* 71 (2011), no. 3, 123-162.
- 19) Cecilia Cavaterra and Maurizio Grasselli, "Robust exponential attractors for singularly perturbed Hodgkin-Huxley equations", *J. Differential Equations* 246 (2009), no. 12, 4670-4701.
- 20) Cecilia Cavaterra and Maurizio Grasselli, "Asymptotic behavior of population dynamics models with nonlocal distributed delays", *Discrete Contin. Dyn. Syst. Ser. A* 22 (2008), no. 4, 861-883.
- 21) Cecilia Cavaterra, Alfredo Lorenzi and Masahiro Yamamoto, "A stability result via Carleman estimates for an inverse source problem related to a hyperbolic integro-differential equation", *Comput. Appl. Math.* 25 (2006), no. 2-3, 229-250.
- 22) Cecilia Cavaterra and Maurizio Grasselli, "Robust exponential attractors for population dynamics models with infinite time delay", *Discrete Contin. Dyn. Syst. Ser. B* 6 (2006), no. 5, 1051-1076.
- 23) Cecilia Cavaterra and Fabrizio Colombo, "Identifying a heat source in automatic control problems", *Comm. Appl. Nonlinear Anal.* 11 (2004), no. 2, 1-23.
- 24) Cecilia Cavaterra and Fabrizio Colombo, "Automatic control problems for reaction-diffusion systems", *J. Evol. Equ.* 2 (2002), no. 2, 241-273.
- 25) Cecilia Cavaterra, "An inverse problem for a viscoelastic Timoshenko beam model", *Z. Anal. Anwendungen* 17 (1998), no. 1, 67-87.
- 26) Cecilia Cavaterra and Maurizio Grasselli, "On an inverse problem for a model of linear viscoelastic Kirchhoff plate", *J. Integral Equations Appl.* 9 (1997), no. 3, 179-218.
- 27) Cecilia Cavaterra and Alfredo Lorenzi, "An identification problem for the Maxwell equations in a non-homogeneous dispersive medium", *Differential Integral Equations* 8 (1995), no. 5, 1167-1190.
- 28) Cecilia Cavaterra and Maurizio Grasselli, "Identifying memory kernels in linear thermoviscoelasticity of Boltzmann type", *Math. Models Methods Appl. Sci.* 4 (1994), no. 6, 807-842.
- 29) Cecilia Cavaterra and Maurizio Grasselli, "An inverse problem for the linear viscoelastic Kirchhoff plate", *Quart. Appl. Math.* 53 (1995), no. 1, 9-33.
- 30) Cecilia Cavaterra, "An inverse problem for a semilinear wave equation", *Boll. Un. Mat. Ital.* B (7) 2 (1988), no. 3, 695-711.

Submitted

- 1) Cecilia Cavaterra, Serena Dipierro, Zu Gao and Enrico Valdinoci, "Global gradient estimates for a general type of nonlinear parabolic equations", <https://arxiv.org/abs/2006.00263>
- 2) Elena Bonetti, Cecilia Cavaterra, Francesco Freddi and Filippo Riva, "On a phase-field model of damage for hybrid laminates with cohesive interface", <https://arxiv.org/abs/2007.08321>
- 3) Cecilia Cavaterra, Sergio Frigeri and Maurizio Grasselli, "Nonlocal Cahn-Hilliard-Hele-Shaw systems with singular potential and degenerate mobility".

Internal reports - Proceedings

- 1) Cecilia Cavaterra, "Automatic control problems for integrodifferential parabolic equations, Mathematical models and methods for smart materials" (Cortona, 2001), Ser. Adv. Math. Appl. Sci., 62, World Sci. Publ., River Edge, NJ (2002), 19-29.
- 2) Cecilia Cavaterra, Giorgio Talenti and Franco Tonani, "First approach to diffusion and convection in a geologic setting", publications of Istituto di Analisi Globale e Applicazioni del CNR, no. 51 (1990), 1-33.

Research experiences

- Department of Mathematics, Rutgers University, New Brunswick NJ (USA).
- Department of Mathematics, Ohio University, Athens OH (USA).
- Department of Mathematics, Poitiers University (France).
- Institute of Mathematics, Fudan University, Shanghai (China).
- Departamento Ecuaciones Diferenciales Y Analisis Numerico, Universidad de Sevilla (Spain).
- New York University, Abu Dhabi (United Arab Emirates).

Talks at conferences or workshops

- 1) "Un problema inverso per una equazione iperbolica semilineare", XIII Congresso UMI, 3-9.9.87, Torino (Italy).
- 2) "Diffusion of gas from sources in the underground", Venice 1: Symposium on Applied and Industrial Mathematics, 2-6.10.89, Venezia (Italy).
- 3) "Un problema di identificazione per la piastra di Kirchhoff viscoelastica", XIV Congresso UMI, 19-25.9.91, Catania (Italy).
- 4) "Propagazione di onde elettromagnetiche in mezzi dispersivi non omogenei", Convegno Progetto Nazionale Equazioni Differenziali, 15-16.4.93, Firenze (Italy).
- 5) "An inverse problem for a thermoviscoelastic plate model", Inverse Problems in Engineering Sciences (IPES-94), 27-30.7.94, Osaka (Japan).
- 6) "Identifying relaxation kernels in viscoelastic plates and beams", Symposium on Inverse Problems, 13-14.3.95, Chemnitz (Germany).
- 7) "Un problema inverso per un modello lineare di piastra di Kirchhoff viscoelastica", XV Congresso UMI, 11-16.9.95, Padova (Italy).
- 8) "An inverse problem for a viscoelastic Timoshenko beam model", Volterra Centennial Symposium, 23-25.5.96, Arlington (USA).
- 9) "Un problema inverso per un modello viscoelastico di trave di Timoshenko", Giornate di studio sui problemi iperboliche, 10-12.10.96, Torino (Italy).
- 10) "An inverse problem for a viscoelastic Timoshenko beam model", 2nd Saxon Symposium on Inverse Problems, Mathematical Methods and Applications, 24-26.9.97, Oybin (Germany).
- 11) "Automatic control problems for reaction-diffusion systems", WCNA-2000, 22-26.7.00, Catania (Italy) (BY INVITATION).
- 12) "Problemi di controllo automatico per equazioni paraboliche integrodifferenziali", Workshop: Modelli matematici e problemi analitici per materiali speciali", 25-29.6.01, Cortona (Italy).
- 13) "Global large time behavior of population dynamics with memory", Inverse and Direct Problems, 20-24.6.05, Cortona (Italy) (BY INVITATION).
- 14) "Exponential attractors for population dynamics models with non local delays", Evolution Equations: Direct and Inverse Problems, 18-20.9.06, Bologna (Italy) (BY INVITATION).
- 15) "Exponential attractors for population dynamics models with non local delays", International Conference on Nonlinear Partial Differential Equations and their Applications, 1-4.6.07, Shanghai (China) (BY INVITATION).
- 16) "On the singularly perturbed Hodgkin-Huxley equations", International Conference on Interdisciplinary Mathematical and Statistical Techniques (IMST2008), 16-18.5.08, Memphis (USA) (BY INVITATION).
- 17) "Robust exponential attractors for singularly perturbed Hodgkin-Huxley equations", 7th AIMS International Conference on Dynamical Systems, Differential Equations and Applications, 18-21.05.08 Arlington (USA) (BY INVITATION).
- 18) "Phase-field systems with nonlinear coupling and dynamic boundary conditions", 6th European Conference on Elliptic and Parabolic Problems, 25-29.05.09, Gaeta (Italy) (BY INVITATION).
- 19) "Phase-field systems with nonlinear coupling and dynamic boundary conditions", VIII Workshop on Partial Differential Equations, 25-28.08.09, Rio de Janeiro (Brazil) (BY INVITATION).

- 20) "Cahn-Hilliard equations with memory and dynamic boundary conditions", 8th AIMS International Conference on Dynamical Systems, Differential Equations and Applications, 25-28.05.10 Dresda (Germany) (BY INVITATION).
- 21) "Cahn-Hilliard equations with memory and dynamic boundary conditions", Workshop on deterministic and stochastic dynamical systems, 04.04.11, Siviglia (Spain) (BY INVITATION).
- 22) "Identifying a space dependent coefficient in a reaction-diffusion equation", Conference of the European GDR Control of PDEs, 21-23.11.11, Marsiglia (France) (BY INVITATION).
- 23) "On a 3D isothermal model for nematic liquid crystals accounting for stretching terms", INdAM Workshop Mathematical Models and Analytical Problems in Special Materials, 16-20.04.12, Roma (Italy) (BY INVITATION).
- 24) "On a 3D isothermal model for nematic liquid crystals accounting for stretching terms", PDEs for multiphase advanced materials ADMAT2012, 17-21.09.12, Cortona (Italy) (BY INVITATION).
- 25) "Identifying a space dependent coefficient in a reaction-diffusion equation", Applied analysis for the material sciences - Conference in honor of Michael Vogelius 60th birthday, 27-31.05.13, Luminy (France) (BY INVITATION).
- 26) "Long-time dynamics of a hyperbolic non-isothermal viscous Cahn Hilliard equation with dynamic boundary conditions", Diffuse interface models DIMO2013, 10-13.09.13, Levico Terme (Italy) (BY INVITATION).
- 27) "Global weak solution and blow-up criterion of the general Ericksen-Leslie system for nematic crystal flows", 10th AIMS conference, 7-11.07.14, Madrid (Spain) (BY INVITATION).
- 28) "Identification of a source factor in a control problem for the heat equation with a boundary memory term", 10th AIMS conference, 7-11.07.14, Madrid (Spain) (BY INVITATION).
- 29) "Global weak solution and blow-up criterion of the general Ericksen-Leslie system for nematic crystal flows", 3rd Amarena Day, 27.04.15, Amiens (France) (BY INVITATION).
- 30) "Global weak solution and blow-up criterion of the general Ericksen-Leslie system for nematic crystal flows", Workshop on Deterministic and Stochastic Partial Differential Equations, 18.06.15, Siviglia (Spain) (BY INVITATION).
- 31) "Non-isothermal viscous Cahn-Hilliard equation with inertial term and dynamic boundary conditions", 8th Congress Romanian Mathematicians, 26.06-01.07.15, Iasi (Romania) (BY INVITATION).
- 32) "Global strong solutions of the full Navier-Stokes and Q-tensor system for nematic liquid crystal flows in 2D: existence and long-time behavior", 4th Amarena Day, 09.05.16, Amiens (France) (BY INVITATION).
- 33) "Global strong solutions of the full Navier-Stokes and Q-tensor system for nematic liquid crystal flows in 2D: existence and long-time behavior ", OCERTO 2016, 20-24.06.16, Cortona (Italy) (BY INVITATION).
- 34) "Global strong solutions of the full Navier-Stokes and Q-tensor system for nematic liquid crystal flows in 2D: existence and long-time behavior", SIMAI2016, 13-16.09.16, Milano (Italy) (BY INVITATION).
- 35) "Mathematical Modeling of Damage, Conservation and Restoration of Cultural Heritage", Scientific Research for Cultural Heritage, 27.02-01.03.17, Abu Dhabi (United Arab Emirates) (BY INVITATION).
- 36) "Optimal boundary control of a simplified Ericksen-Leslie system for a nematic liquid crystal flows in 2D", 5th Amarena Day, 15-16.05.17, Amiens (France) (BY INVITATION).
- 37) "An inverse problem for a semilinear parabolic equation arising from cardiac electrophysiology", Current trends in applied mathematics, 27-29.10.17, Iasi (Romania) (BY INVITATION).
- 38) "Optimal boundary control of a simplified Ericksen-Leslie system for a nematic liquid crystal flows in 2D", International Conference on Applied Mathematics, 3-6.01.2018, Miami (USA) (BY INVITATION).
- 39) "An optimal boundary control problem for nematic liquid crystal flows in 2D", Workshop Trends in variational evolution, 21.02.2018, Vienna (Austria) (BY INVITATION).
- 40) "An inverse problem arising from cardiac electrophysiology", 6th AMARENA Days, 3-4.05.18, Amiens (France) (BY INVITATION).
- 41) "An inverse problem arising from cardiac electrophysiology", INdAM Workshop Mathematical and Numerical Modeling of the Cardiovascular System, 16-19.04.18, Roma (Italy) (BY INVITATION).
- 42) "A Nonlinear Model for Marble Sulphation Including Surface Rugosity: Theoretical and Numerical Results", The 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications, 05-09.07.18, Taipei (Taiwan) (BY INVITATION).
- 43) "A Nonlinear Model for Marble Sulphation Including Surface Rugosity: Theoretical and Numerical Results", Current Trends in Applied Mathematics, 10-11.09.18, Iasi (Romania) (BY INVITATION).
- 44) "Long-time Dynamics and Optimal Control of a Diffuse Interface Model for Tumor Growth", Lebanese International Conference on Mathematics and Applications LICMA'19, 15-18.04.19, Beirut (Lebanon) (BY INVITATION).
- 45) "On the determination of small ischemic regions in the monodomain model of cardiac electrophysiology", Recent advances in Phase-Field modeling: from Engineering to Biology PHASE2019, 8-10.05.19, Pavia (Italy) (BY INVITATION).

- 46) "Long-time dynamics and optimal control of a diffuse interface model for tumor growth", 7th AMARENA Days, 15-16.05.19 Amiens (France) (BY INVITATION).
- 47) "An inverse problem for the monodomain model of cardiac electrophysiology", XXI Congresso Unione Matematica Italiana, 02-07.09.19, Pavia (BY INVITATION).

Other talks at research institutions

- 1) "An identification problem for the Maxwell equations in a non-homogeneous dispersive medium", Graduate School of Mathematical Sciences, University of Tokyo, 03/08/1994, Tokyo (Japan).
- 2) "Identifying relaxation kernels of linear viscoelastic plates and beams", Ohio University, 29/05/1996, Athens OH (USA).
- 3) "Inverse and direct problems for a model of viscoelastic Timoshenko beam with nonlinearities", Institut für Angewandte Mathematik I, Bergakademie, 22/09/1997, Freiberg (Germany).
- 4) "Analysis of a semilinear hyperbolic integrodifferential system", Ohio University, 07/05/1998, Athens OH (USA).
- 5) "Identifying memory kernels in thermoviscoelasticity", Ohio University, 13/05/1998, Athens OH (USA).
- 6) "Automatic control problems for reaction-diffusion systems", Dipartimento di Matematica, Technion, 30/05/2001, Haifa (Israel).
- 7) "Automatic control problems for integrodifferential parabolic equations", Dipartimento di Matematica, Università di Modena, 05/03/2003, Modena (Italy).
- 8) "Automatic control problems for integrodifferential parabolic equations", Poitiers University, 27/05/2004, Poitiers (France).
- 9) "Automatic control problems for integrodifferential parabolic equations", Fudan University, 11/05/2005, Shanghai (China).
- 10) "Perturbazioni singolari delle equazioni di Hodgkin-Huxley", Università degli Studi di Firenze, 11/04/2008, Firenze (Italy).
- 11) "Global weak solution and blow-up criterion of the general Ericksen-Leslie system for nematic crystal flows", 26/11/2013, KAUST, (Saudi Arabia).
- 12) "Global weak solution and blow-up criterion of the general Ericksen-Leslie system for nematic crystal flows", 19/03/2014, Fudan University, Shanghai (China).
- 13) "Global weak solution and blow-up criterion of the general Ericksen-Leslie system for nematic crystal flows", 26/05/2014, Poitiers University (France).
- 14) "An inverse problem for a semilinear parabolic equation arising from cardiac electrophysiology" 31/05/2017, Fudan University, Shanghai (China).
- 15) "An inverse problem for a semilinear parabolic equation arising from cardiac electrophysiology", 19/10/17, Istituto di Statistica Matematica e Matematica Applicata, Bucarest (Romania).

Editorial activity

- 1) Member of the editorial board of Discrete and Continuous Dynamical Systems Series S.
- 2) Co-editor (with P. Cannarsa, A. Favini, A. Lorenzi, E. Rocca) of the volume "New trends in direct, inverse, and control problems for evolution equations", Discrete Contin. Dyn. Syst. Ser. S, 4 (2011).
- 3) Co-editor (with E. Bonetti, E. Rocca, R. Rossi) of the volume "Special issue dedicated to Michel Frémond on the occasion of his 70th birthday", Discrete Contin. Dyn. Syst. Ser. S, 6 (2013).
- 4) Co-editor (with E. Bonetti, R. Natalini, M. Solci) of the volume "Mathematical Modeling in Cultural Heritage - MACH2019", Springer INdAM Series (in press, forthcoming February 2021).

Referee and review activity

- 1) Referee for: Mathematical Methods in the Applied Sciences, Discrete and Continuous Dynamical Systems, Nonlinear Analysis Series A: Theory, Methods & Applications, Applicable Analysis, Mathematical Modeling and Analysis, Electronic Journal of Differential Equations, Inverse Problems, AIMS Proceedings, Czechoslovak Mathematical Journal, Springer INdAM Series, Applied Mathematics Letters, Journal of Optimization Theory and Applications, Mathematic Control and related Fields, Journal of Mathematical Analysis and Applications, Communications on Pure and Applied Analysis, Applied Mathematics and Optimization, Journal of Applied Analysis, Inverse Problems in Science & Engineering.
- 2) Referee for INdAM fellowships in Mathematics and/or Applications cofounded by Marie Curie Actions.

- 3) Referee for National Fund for Scientific and Technological Development (FONDECYT) of Chile.
- 4) MIUR-REPRISE scientific expert.
- 5) Referee for Mathematical Reviews since 2006.

Member of Scientific and Organizing Committees of conferences, workshop, minicourses

- 1) Second Meeting on Inverse and Direct Problems and Applications, 02-06.04.01, Gargnano (Italy).
- 2) Two INDAM Minicourses "Problemi Inversi ed Applicazioni", 09-13.12.02, Milano (Italy).
- 3) Third Meeting on Inverse and Direct Problems and Applications 31.03-04.04.03, Gargnano (Italy).
- 4) Evolution Equations: Inverse and Direct Problems, 20-25.06.04, Cortona (Italy) (funded by INdAM).
- 5) Direct and Inverse Problems in Evolution Equations 17-19.03.05, Rimini (Italy).
- 6) Inverse and Control Problems for PDE's (ICOP), 13-16.03.06, Roma (Italy).
- 7) Direct, Inverse and Control Problems for PDE's (DICOP), 25-28.06.07, Roma (Italy) (funded by INdAM).
- 8) Direct, Inverse and Control Problems for PDE's (DICOP-08), 22-26.09.08, Cortona (Italy) (funded by INdAM).
- 9) Interfaces and Discontinuities in Solids, Liquids and Crystals (INDI2011), 20-23.06.11, Gargnano (Italy).
- 10) Workshop "Applications in Inverse Problems", 26-29.01.15, Milano (Italy).
- 11) Special Materials in Complex Systems, (SMaCS 2015), 18-22.05.15, Roma (Italy) (funded by INdAM).
- 12) Special Materials and Complex Systems, (SMaCS 2018), 18-22.06.18, Gargnano (Italy).
- 13) SS144 - Analytic properties and numerical approximation of differential models arising in applications, AIMS 12th conference, 05-09.07.18, Taipei (Taiwan).
- 14) Le Scienze e I Beni Culturali: Innovazione e Multidisciplinarietà, 26.02.19, Milano (Italy).
- 15) INdAM Workshop Mathematical modeling and Analysis of degradation and restoration in Cultural Heritage (MACH2019), 25-29.03.19, Roma (Italy) (funded by INdAM).

Participation to research projects (partially in italian)

- 1) PRIN 1997 - Equazioni differenziali e metodi analitici, geometrici e funzionali, e applicazioni, coordinator Giorgio Talenti.
- 2) PRIN 1999 - Simmetrie, forme geometriche, evoluzione e memoria nelle equazioni alle derivate parziali, coordinator Giorgio Talenti.
- 3) Project GNAFA-GNAMPA 2001 - Problemi inversi per equazioni di evoluzione, coordinator Giovanni Alessandrini.
- 4) PRIN 2004 - Analisi Matematica nei problemi inversi, coordinator Giovanni Alessandrini.
- 5) Project GNAMPA 2004 - Problemi diretti ed inversi per equazioni di evoluzione, coordinator Alfredo Lorenzi.
- 6) Project GNAMPA 2008 - Equazioni di evoluzione nelle scienze dei materiali come sistemi dinamici infinito-dimensionali, coordinator Giulio Schimperna.
- 7) PRIN 2008 - Analisi Matematica nei Problemi Inversi per le Applicazioni, coordinator Giovanni Alessandrini.
- 8) Project GNAMPA 2009 - Analisi matematica di formulazioni energetiche ed entropiche per problemi non-smooth in termomeccanica, coordinator Elena Bonetti.
- 9) Project GNAMPA 2010 - Analisi di modelli ad interfaccia diffusa di fluidi interagenti, coordinator Elisabetta Rocca.
- 10) Italian-French European Research Group on Control of PDE GDRE-CONEDP, coordinators Fatiha Alabau-Boussouira, Fabio Ancona, Piermarco Cannarsa, Olivier Glass (2009-2013).
- 11) Participation to ERC 10 project Entropy formulation of evolutionary phase transitions - EntroPhase (FPT-IDEAS-ERC-StG 256872), PI Elisabetta Rocca (April 01, 2011 - March 31, 2017).
- 12) Coordinator of overheads funds of ERC 10 project EntroPhase, PI Elisabetta Rocca.
- 13) Project GNAMPA 2012 - Analisi matematica per flussi di cristalli liquidi, coordinator Antonio Segatti.
- 14) Project GNAMPA 2016 - Buona positura e analisi asintotica per modelli di cristalli liquidi e polimeri, **coordinator Cecilia Cavaterra.**
- 15) Project GNAMPA 2017 - Problemi di riduzione dimensionale nell'ambito del contatto con adesione e analisi del caso dinamico, coordinator Giovanna Bonfanti.
- 16) Collaborator of CNR Institute IMATI of Pavia (Italy) for the projects: 1) Mathematical modeling 2) Bilateral Agreement Italia - Romania RA (Romanian Academy) (20/07/2017-19/07/2019).
- 17) Bilateral agreement project Italia-Romania "Control and stabilization problems for phase-field and biological systems", coordinator Pierluigi Colli, Università di Pavia.
- 18) Project GNAMPA 2018 - Analisi Matematica di modelli a interfaccia diffusa per fluidi complessi, coordinator Andrea Giorgini.

- 19) Department project funded by Università degli Studi di Milano (PSR-2) 2018, 2017, 2016, 2015: Analisi, Geometria e Fisica Matematica dei sistemi variazionali non-lineari; teoria ed applicazioni, coordinator Giuseppe Gaeta.
- 20) Department project funded by Università degli Studi di Milano (PSR-2) 2019: Equazioni differenziali: aspetti analitici e applicazioni, **coordinator Cecilia Cavaterra**.
- 21) Project GNAMPA 2020 - Analisi e Controllo di Modelli a Interfaccia diffusa in Fisica e Biologia, coordinator Sergio Frigeri.
- 22) Collaborator of CNR Institute IMATI of Pavia (Italy) for the project: Mathematical modeling (27/07/2020 – 26/07/2023).

Scientific and financial responsibility for research projects (partially in italian)

- 1) Project Seal of Excellence (SoE) (SEED) 2020 (PSR-3), funded by Università degli Studi di Milano (25.000 Euros) - SciCult Modellizzazione matematica e analisi SCIENTIFICA per i beni CULTURALI: previsione e prevenzione del degrado chimico e meccanico di pietre monumentali in ambienti outdoor, **Principal Investigator Cecilia Cavaterra**.
- 2) Department project funded by Università degli Studi di Milano (PSR-2) 2019: Equazioni differenziali: aspetti analitici e applicazioni, **coordinator Cecilia Cavaterra**.
- 3) Project GNAMPA 2016 - Buona positura e analisi asintotica per modelli di cristalli liquidi e polimeri, **coordinator Cecilia Cavaterra**, funded by GNAMPA-INDAM.
- 4) Overheads ERC 2010 EntroPhase project, Principal Investigator Elisabetta Rocca.

Other scientific activities

- Member of the PhD boards in Mathematical Sciences of Università degli Studi di Milano, academic years 13/14, 14/15, 15/16, 16/17, 17/18, 18/19, 19/20, 20/21.
- Referent for the PostDoc in Biomatematics Sergio Frigeri, May 2, 2019 – May 1, 2021.
- Tutor of PhD student Zu Gao, Central South University of Changsha (China), fellowship *China Scholarship Council - Joint Doctoral Program* with Università degli Studi di Milano (Italy), academic year 18/19.
- Advisor and co-advisor of Master theses.
 - In 2020:
 - Marco Abatangelo: A Cahn-Hilliard-Darcy system with logarithmic potential and non-autonomous sources.
 - Riccardo Voso: Analysis of the Navier-Stokes Phase-Field Crystal System.

Academic organizing and management activities

- Member of the Department of Mathematics board, January 2020 – present.
- Member of the Science and Technology Faculty board, January 2020 – September 2020.
- Member of the Department of Mathematics board, September 2005 – September 2011.
- Member of the evaluation committee for a researcher (RTDB) position at Politecnico di Milano (Italy).
- Member of the evaluation committee for PhD admittance (20/21) at Università degli Studi di Milano (Italy).
- Member of the evaluation committee for PhD admittance (17/18) at Università degli Studi di Milano (Italy).
- Member of the evaluation committee for a researcher position at Università degli Studi di Sassari (Italy).
- Organizer with Ottavio Rizzo and Giulia Lami of the exhibition "Enigma: decifrare una vittoria. I polacchi (e la matematica) al servizio dell'Europa", Department of Mathematics, Università degli Studi di Milano (Italy), April 12-21, 2012.
- Member of the committee for the reorganization of the course "Elementi di Matematica di Base", bachelor degree in Mathematics, academic years 14/15, 16/17.
- Member of the committee for the reorganization of the bachelor degree in Mathematics, academic year 15/16.
- Member of the committee for spaces in the Department, academic years 11/12, 12/13, 13/14, 14/15, 15/16, 16/17, 20/21.
- Member of the committee for conference funding, academic years 11/12, 12/13, 13/14, 14/15, 15/16, 16/17, 17/18, 18/19, 19/20, 20/21.

Other management activities

- Member of the Municipal Council of Saronno (Italy), responsible for youth, education, cultures, sports and equal opportunities May 2010 – June 2015.

Chair teaching activities (partially in Italian)

- **Analisi Matematica II** for Bachelor degree in Computer Science. Academic years: 99/00, 00/01, 01/02.
- **Matematica I** for Bachelor degree in Geological Sciences. Academic years: 02/03, 03/04, 04/05, 05/06, 06/07, 07/08, 08/09, 09/10, 10/11, 11/12, 12/13, 13/14, 14/15, 15/16.
- **Complementi di Analisi Matematica** for Master degree in Computer Science. Academic years: 03/04, 04/05, 05/06, 06/07, 07/08, 08/09.
- **Partial Differential Equations II** for Master degree in Mathematics and PhD program in Mathematics. Academic years: 09/10.
- **Evolution Equations** for Master degree in Mathematics and PhD program in Mathematics. Academic years: 10/11, 11/12, 12/13.
- **Analisi Matematica I** for Bachelor degree in Mathematics. Academic years: 13/14, 14/15, 15/16, 16/17.
- **Matematica Generale** for Bachelor degree in Biological Sciences. Academic years: 18/19, 19/20.
- **Matematica del Continuo** for Bachelor degree in Computer Science. Academic year: 20/21.

Teaching assistant activities (partially in Italian)

- **Analisi Matematica 3** for Bachelor degree in Mathematics. Academic years: 18/19, 19/20, 20/21.
- **Matematica I** for Bachelor degree in Geological Sciences. Academic year: 16/17.
- **Calculus I** and **Calculus II** for Bachelor degrees in Biological Sciences, Chemistry, Computer Science, Industrial Chemistry, Geological Sciences; **Analisi Matematica I** and **Analisi Matematica II** for Bachelor degree in Mathematics. Academic years: 90/91, 91/92, 92/93, 93/94, 94/95, 95/96, 96/97, 97/98, 98/99, 99/00, 00/01.

DATE: May 10, 2021

Cecilia Cavaterra