Curriculum of
Giuseppe Maria Coclite

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Address and Affiliation:
Prof. Giuseppe Maria Coclite, PhD
Department of Mechanics, Mathematics and Management
Polytechnic University of Bari
Via E. Orabona 4, 70125, Bari (Italy)
tel.: +39-080.596.3653
e-mail: giuseppemaria.coclite@poliba.it
URL: https://sites.google.com/site/coclitegm/

1. Education and Vita

He was born on 31-7-1977 in Bari (Italy). On 16-12-1999 he obtained the Laurea in Matematica (Degree in Mathematics) at Università degli Studi di Bari, defending with Professors D. Fortunato and M. Lazzo the graduate thesis "Metodi Variazionali Applicati allo Studio delle Equazioni di Schrödinger-Maxwell" ("Variational Methods for the Schrödinger-Maxwell Equations") with full marks Cum Laude.

From the academic year 1999/2000 to the one 2002/2003 he was Ph.D. student in the Sector of Functional Analysis and Applications of S.I.S.S.A.-I.S.A.S. (Trieste, Italy).

On 29-10-2003 he defended with supervisor Professor. A. Bressan and opponent Professor. J.-M. Coron the Ph.D. thesis "Control Problems for Systems of Conservation Laws" and he got the Ph.D. in Mathematics in S.I.S.S.A.-I.S.A.S., Trieste.

From 11-10-2003 to 31-12-2004 he was postdoc in the Centre of Mathematics for Applications (C.M.A., Oslo, Norway).

From 1-1-2005 to 28-2-2013 he was Research Associate (Ricercatore) in Mathematical Analysis at the Science Faculty of the University of Bari (Italy).

From 1-3-2013 to 21-12-2016 he was Associate Professor in Mathematical Analysis at the Department of Mathematics of the University of Bari (Italy).

On December 2013 he got the national qualification as Full Professor in Mathematical Analysis.

From 22-12-2016 he is Full Professor in Mathematical Analysis at the Department of Mechanics, Mathematics and Management of the Polytechnic University of Bari (Italy).

From 2017 he is the head of the Mathematics Division of the Department of Mechanics, Mathematics and Management of the Polytechnic University of Bari (Italy).

From 1-1-2006 he is member of the Italian Mathematical Society U.M.I.

From 1-1-2020 he is member of the European Mathematical Society E.M.S.

The paper "G. M. Coclite and K. H. Karlsen, *On the well-posedness of the Degasperis-Procesi equation,* J. Funct. Anal. 233 (2006) no. 1, 60-91." in 2009 is in the top 10 cited papers published in the last 5 years on the Journal of Functional Analysis.

In 2018 he was selected to teach the excellence course "Conservation Laws and Traffic Models" for the PhD program in Mathematics of the Polytechnic University of Torino.

2. Visiting Positions

(1) From 1-1-2005 to 31-10-2005 he has been Visiting Professor in the Centre of Mathematics for Applications (CMA) in Oslo (Norway).
(2) From 1-4-2009 al 30-5-2009 he has been Visiting Professor in the Centre for Advanced Study (CAS) of the Norwegian Academy of Science and Letters in Oslo (Norvegia) and participated to the activities of the research group "Nonlinear Partial Differential Equations".
(3) From 1-3-2019 to 31-05-2019 he has been Visiting Professor in Laboratoire de Mathématiques of the Université de Franche-Comté in Besançon (France).
(4) From 1-3-2023 to 30-06-2023 and from 19-4-2026 to 30-5-2026 he has been Visiting Professor in the HIAS-Hamburg Institute for Advanced Study in Hamburg (Germany).

3. Grants

PI of the following grants.

(1) GNAMPA 2010 individual grant "Sistemi di leggi di conservazione con sorgente nonlocale singolare" (Systems of conservation laws with singular nonlocal source).
(2) GNAMPA 2012 individual grant "Controllabilità, stabilizzabilità e regolarità di soluzioni di equazioni iperboliche non lineari" (Controllability, stabilizability, and regularity of solutions of nonlinear hyperbolic equations).
(3) GNAMPA 2017 grant "Problemi nonlineari in elasticita', fluidodinamica e traffico" (Nonlinear Problems in Elasticity, Fluid dynamics, and traffic).
(4) GNAMPA 2018 grant "Problemi asintotici ed evolutivi con applicazioni a metamateriali e reti" (Asymptotic and evolutive problems with applications to metamaterials and networks).
(5) GNAMPA 2019 grant "Problemi non locali ed asintotici in meccanica dei continui" (Asymptotic and nonlocal problems with applications to continuum mechanics).
(6) FRA (PoliBA) 2019 grant "Problemi asintotici ed evolutivi con applicazioni a metamateriali e reti" (Asymptotic and evolutive problems with applications to metamaterials and networks).
(7) GNAMPA 2020 grant "Problemi asintotici e fenomeni singolari in meccanica dei continui" (Asymptotic problems and singular phenomena in continuum mechanics).
(8) PRIN 2022 grant "Evolution problems involving interacting scales".

4. Editorial Activity

He is member of the editorial board of the journals

(1) Zeitschrift für angewandte Mathematik und Physik (ZAMP) from July 2013;

(2) Journal of Mathematical Analysis and Applications (JMAA) from July 2019;
(3) Advances in Discrete and Continuous Models (AIDEE) from April 2023;
(4) Networks and Heterogeneous Media (NHM) from November 2023.

In 2016 he edited the special issue

- F. Ancona, L. Caravenna, A. Cesaroni, G. M. Coclite, C. Marchi, A. Marson. *Analysis and control on networks: trends and perspectives.* Netw. Heterog. Media 12 (2017), no. 2, i–ii.

generated form the workshop "ANalysis and COntrol on NETworks: trends and perspectives" that took place in Padova (Italy) from the 9th to the 11th of March 2016.

He edited the special issues

(1) G. M. Coclite. Nonlinear models in applied mathematics. *Mathematics in Engeneering.*
(2) G. M. Coclite and F. Maddalena. New Mathematical Trends in the study of materials behavior. *Advances in Continuous and Discrete Models.*
(3) B. Andreianov, G. M. Coclite, C. Donadello, and N. Igbida. Mathematical modeling, Analysis and Approximation of Vehicular and Pedestrian Dynamics. *Zeitschrift für angewandte Mathematik und Physik.*
(4) G. M. Coclite. Nonlinear PDEs in material science. *Networks and Heterogeneous Media.*

5. Students

He supervised the Postdoc

(1) Marzia Romano from 2020 to 2023 in the Polytechinic University of Bari on the project "Decohesion and localization effects in nonlinear thermoelasticity".

He supervised the PhD students

(1) Lorenzo di Ruvo from the University of Bari (Italy), that defended on the 31/05/2013 the PhD thesis "Discontinuous solutions for the Ostrovsky-Hunter equation and two-phase flows".
(2) Johanna Ridder from the University of Oslo (Norway) in collaboration with Prof. N. H. Risebro, that defended on the 06/04/2016 the PhD thesis "Finite Difference Methods for Nonlinear Evolution Equations. Convergence Proofs and Applications to Liquid Crystals".
(3) Sabrina Francesca Pellegrino from the University of Bari (Italy) in collaboration with Prof. F. Paparella, that defended on the 08/03/2019 the PhD thesis "Fluidodynamic Models for Convective Flows and Vehicular Traffic".
(4) Thi Nhu Thao Nguyen from the University of Franche-Comté (France) in collaboration with Proff. U. Razafison and C. Donadello, that defended on the 20/11/2020 the PhD thesis "Modélisation mathématique et simulation de la dynamique spatiale de populations de campagnols dans l'est de la France".

(5) Pier Luigi Ciampoli from the Politecnico di Bari (Italy) in collaboration with Proff. G. Uva and F. Maddalena, that defended on the 18/03/2021 the PhD thesis "Development of a framework for the regional vulnerability assessment of RC buildings: an automatic tool based on typological-mechanical modelling and non linear time history analyses".

He supervised the master students

(1) Cinzia Gangale, that defended on the 01/10/2015 the master thesis in Mathematics "Modelli fluidodinamici di traffico" with full marks 110/110.
(2) Felisia Angela Chiarello, that defended on the 30/03/2017 the master thesis in Mathematics "Leggi di Conservazione e Viscosità Evanescente su un Grafo Orientato" with full marks 110/110 cum laude.
(3) Laura Forina, that defended on the 13/12/2018 the master thesis in Mathematics "Equazioni dispersive semilineari" with marks 95/110.
(4) Nicola De Nitti, that defended on the 26/03/2020 the master thesis in Mathematics "Differentiability properties of the flow associated to a rough vector field" with full marks 110/110 cum laude.

He supervised the bachelor student

(1) Nicola De Nitti, that defended on the 16/03/2018 the bachelor thesis in Mathematics "Well-posedness of viscosity solutions for a class of partial integro-differential equations modeling pricing under uncertainty" with full marks 110/110 cum laude.
(2) Michele Guaragno, that defended on the 21/04/2022 the bachelor thesis in Mechanical Engineering "Ottimizzazione vincolata: un'applicazione a un sistema complesso" with 106/110.
(3) Marco Antonio Dicuonzo, that defended on the 14/10/2022 the bachelor thesis in Computer Science and Automation Engineering "Teoria Wavelet e applicazioni" with 94/110.
(4) Roberta Pacucci, that defended on the 15/03/2023 the bachelor thesis in Computer Science and Automation Engineering "Problemi di trasporto su reti di dati" with 98/110.
(5) Lorenzo Scoditti, that defended on the 21/07/2026 the bachelor thesis in Mechanical Engineering "Analisi di Fourier e le applicazioni alla Peridinamica" with full marks 110/110 cum laude.

6. Scientific Committee of Workshops

(1) INdAM workshop"Present Research Trends in Conservation Laws", Roma (Italy), 08-10 September 2021.
(2) CIME Summer school "PDEs, Control and Deep Learning" Cetraro (Italy), 22-26 July 2024.
(3) "Machine Learning and PDEs Workshop" Erlangen (Germany), 28-30 April 2025.

(4) “Machine Learning and PDEs Workshop” Erlangen (Germany), 22-24 June 2026.

7. Organization of Workshops

(1) “Nonlinear PDEs: Theory, Numerics, and Applications” 26-27 April 2004 Oslo (Norway).
(2) “Camassa-Holm and other nonlinear dispersive equations” 7-8 June 2004 Oslo (Norway).
(3) “Mathematical Aspects of the Schroedinger Equation” 14 June 2004 Oslo (Norway).
(4) “IperBA09 - XIII Incontro Nazionale Problemi di Tipo Iperbolico”, Bari (Italy) 11 - 13 February 2009.
(5) “V International Meeting on Lorentzian Geometry (GeLoBa2009)”, Martina Franca (Taranto, Italy), 8 - 11 July 2009.
(6) “Fourteenth Conference on Hyperbolic Problems Theory, Numerics, Applications - HYP2012”, Padova (Italy), 25-29 June 2012.
(7) “ANalysis and COntrol on NETworks: trends and perspectives”, Padova (Italy), 9-11 March 2016.
(8) “One Day Workshop on Applied Mathematics”, Bari (Italy), 8 June 2017.
(9) “The finite volume schemes and traffic modeling of Besançon”, Besançon (France), 22-23 November 2017.
(10) “PDE in Bari-Celebrating the 60th Birthday of Enrico Jannelli”, Bari (Italy), 1-2 February 2018.
(11) “II-One Day Workshop on Applied Mathematics”, Bari (Italy), 31 May 2018.
(12) “Giornata INdAM 2019”, Bari (Italy), 2 June 2019.
(13) “III-One Day Workshop on Applied Mathematics”, Bari (Italy), 06 June 2019.
(14) RISM workshop “PDEs and continuum mechanics”, Varese (Italy), 21-23 July 2021.
(15) “IV-One Day Workshop on Applied Mathematics”, Bari (Italy), 31 May 2022.
(16) “Modern aspects of PDEs”, Bari (Italy), 23-24 June 2022.
(17) “NHR 60 - A conference in honour of Nils Henrik Risebro on the occasion of his 60th birthday”, Oslo (Norway), 12-14 September 2022.
(18) “PDEs theory, numerics, and applications”, Hamburg (Germany), 15-16 June 2023.
(19) RISM workshop “Second RISM Congress on PDEs and continuum mechanics”, Varese (Italy), 10-12 April 2024.
(20) “Modern Aspects of PDE - II Edition”, Bari (Italy), 17 June 2024.
(21) “Multiscale and Nonlocal Problems in PDEs”, Palermo (Italy), 20-21 June 2024.
(22) “Second workshop on Multiscale and Nonlocal Problems in PDEs”, Bari (Italy), 19-21 Febbruary 2025.

8. Organization of Mini symposia

(1) "Analysis of Nonlinear PDE in Wave Propagation Problems" in the workshop "2008 SIAM Conference on Nonlinear Waves and Coherent Structures" 21-24 July 2008 Rome (Italy).
(2) "Models and applications of the theory of conservation laws" in the workshop "SIMAI 2014" 7-10 July 2014 Taormina (Italy).
(3) "Dynamics and control" in the workshop "GAMM 86th Annual Scientific Conference" 23-27 March 2015 Lecce (Italy).

9. Invited Lectures

(1) On 4-6-2002, he had the talk "On the Exact Boundary Controllability of Linear Hyperbolic Systems" at the workshop "Leggi di Conservazione Iperboliche: recenti risultati e prospettive di ricerca" Bologna (Italy) 3-4 June 2003.
(2) On 7-6-2004, he had the talk "On the Wellposedness for a Generalized Hyperelastic-Rod Wave Equation" at the workshop "Camassa-Holm and other nonlinear dispersive equations" 7-8 June 2004 Oslo (Norway).
(3) On 14-6-2002, he had the talk "On the Coupled Maxwell - Schrödinger Equations" at the workshop "Mathematical Aspects of the Schroedinger Equation" 14 June 2004 Oslo (Norway).
(4) On 1-7-2004, he had the talk "On the boundary control of first order hyperbolic equations" at the workshop "Fourth World Congress of Nonlinear Analysts WCNA-2004" 30 June-7 July 2004 Orlando (Florida, U.S.A.).
(5) On 4-3-2005, he had the talk "Singular Limits Problems for Shallow Water Equations" at the workshop "Recent Advances in Nonlinear PDEs" 3-4 March 2005 Oslo (Norway).
(6) On 2-6-2005, he had the talk "Diffusive - Dispersive Limits for Shallow Water Equations" at the workshop "Workshop on PDE and Harmonic Analysis" 1-3 June 2005 Trondheim (Norway).
(7) On 14-6-2005, he had the talk "On a Generalized Hyperelastic-Rod Wave Equation" at the workshop "Fourth meeting on Hyperbolic Conservation Laws: Recent results and Research perspectives" 13-14 June 2005 Trieste (Italy).
(8) On 3-7-2005, he had the talk "On a Generalized Hyperelastic-Rod Wave Equation" at the workshop "Joint Summer Research Conference on Control Methods in PDE-Dynamical Systems" 3-7 July 2005 Snowbird (Utah, U.S.A.).
(9) On 27-6-2006, he had the talk "Global Weak Solutions to a Generalized Hyperelastic-Rod Wave Equation" at the workshop "AIMS' Sixth International Conference on Dyn. Systems, Diff. Equations and Applications" 25 - 28 June 2006 Poitiers (France).

(10) On 7-6-2007, he had the talk "Discontinuous Solutions for the Degasperis-Procesi equation" at the workshop "SPT 2007-Symmetry and Perturbation Theory" 2 - 9 June 2007 Otranto (Italy).

(11) On 26-9-2007, he had the talk "Soluzioni discontinue per l'equazione di Degasperis-Procesi" at the workshop "XVIII Congresso dell'Unione Matematica Italiana" 24-29 September 2007 Bari (Italy).

(12) On 21-7-2008, he had the talk "Wellposedness of a Shallow Water Equation" at the workshop "2008 SIAM Conference on Nonlinear Waves and Coherent Structures" 21-24 July 2008 Rome (Italy).

(13) On 24-11-2008, he had the talk "Conservation Laws with Singular Nonlocal Sources" at the conference "Trent'anni di Analisi Matematica alla SISSA: il contributo degli ex allievi" 24-27 November 2008, Trieste (Italy).

(14) On 2-7-2009, he had the talk "Conservation Laws with Singular Nonlocal Sources" at the conference "EEMMAS - Evolution Equations and Mathematical Models in the Applied Sciences" June 29 - July 03 2009, Taranto (Italy).

(15) On 28-1-2010, he had the talk "Conservation Laws with Singular Nonlocal Sources" at the conference "Conference on Control of PDE's" 25-29 January 2010, CIRM Marseille (France).

(16) On 16-6-2010, he had the talk "The Degasperis-Procesi equation" at the workshop "Thirteenth International Conference on Hyperbolic Problems Theory, Numerics, Applications" 14-19 June 2010 Beijing (China).

(17) On 15-7-2011, he had the talk "Vanishing viscosity on networks" at the workshop "Evolution Equations and Operator Semigroups On the occasion of the 70th birthday of Jerry Goldstein and Rainer Nagel" 14-15 July 2011, Bari (Italy).

(18) On 20-7-2011 , he had the talk "An optimal harvesting problem with measure valued solutions" at the workshop "Ninth Meeting on Hyperbolic Conservation Laws and Fluid Dynamics: Recent Results and Research Perspectives", Trieste (Italy), 18 - 22 July, 2011.

(19) On 8-7-2014, he had the talk "Systems with moving boundaries" at the workshop "2014 SIMAI" 7-10 July 2014 Taormina (Italy).

(20) On 17-9-2014, he had the talk "An evolutive optimal harvesting problem with measure valued solutions" at the workshop "PDE's, Inverse Problems and Control Theory", Bologna (Italy), 15 - 19 September, 2014.

(21) On 12-2-2015, he had the talk "Hyperbolic-Elliptic models for two-phase flow in porous media" at the workshop "Contemporary topics in conservation laws", Besançon (France), 9 - 12 February, 2015.

(22) On 20-3-2015, he had the talk "Hyperbolic-Elliptic models for two-phase flow in porous media" at the workshop "Brainstorming on Hyperbolic Equations", Bari (Italy), 20 March, 2015.

(23) On 14-6-2016, he had the talk "A model for the morphogens evolution in a growing tissue" at the workshop "11th Meeting on Nonlinear Hyperbolic PDEs and Applications On the occasion of the 60th birthday of Alberto Bressan", Trieste (Italy), 13-17 June 2016.

(24) On 5-7-2016, he had the talk "A model for the morphogens evolution in a growing tissue" at the workshop "Non-linear PDEs, mathematical physics, and stochastic analysis", Trondheim (Norway), 4-7 July 2016.

(25) On 13-7-2018, he had the talk "A model for the morphogens evolution in a growing tissue" at the workshop "Evolution Equations and PDEs, on the Occasion of the 60th Birthday of Gisele Goldstein", Bari (Italy), 13 July 2018.

(26) On 21-11-2018, he had the talk "Nonlinear Peridynamic Models" at the workshop "NTNU workshop on PDEs", Trondheim (Norway), 21-23 November 2018.

(27) On 28-11-2018, he had the talk "Nonlinear Peridynamic Models" at the workshop "Analysis, Control and Inverse Problems for PDEs", Napoli (Italy), 26-30 November 2018.

(28) On 25-06-2019, he had the talk "Nonlinear Peridynamic Models" at the workshop "Functional analytic methods for PDEs", Cesena (Italy), 25-28 June 2019.

(29) From the 1st to the 5th of July 2019 in Cetraro (CS, Italy) he had the course "Conservation Laws in Continuum Mechanics" as a part of the CIME program "Applied Mathematical Problems in Geophysics".

(30) On 13-07-2021, he had the talk "Nonlocal evolution equations in Peridynamics" at the workshop "PDEs and Semigroups in Applied Analysis - On the occasion of J.A. Goldstein's 80th Birthday", Bari (Italy), 12-15 July 2021.

(31) On 13-07-2022, he had the talk "Nonlocal regularization of conservation laws" at the workshop "12th Meeting on Nonlinear evolution PDEs, fluid dynamics and transport equations", L'Aquila (Italy), 13-15 July 2022.

(32) On 05-12-2022, he had the talk "Nonlocal regularization of conservation laws" at the workshop "Recent advances in direct and inverse problems for PDEs and applications", Roma (Italy), 05-07 December 2022.

(33) On 21-02-2023, he had the talk "Nonlinear Peridynamic Models" at the workshop "Giornata INDAM Unità di Ricerca di Bari 2023", Bari, 21 February 2023.

(34) On 23-02-2024, he had the online talk "Vehicular and population dynamics on network" at the online workshop "Kick-off meeting del progetto PRIN PNRR 2022 Mathematical Modeling of Biodiversity in the Mediterranean Sea: from bacteria to predators, from meadows to currents", 23 February 2024.

(35) On 26-05-2024, he had the talk "Nonlocal conservation laws: singular limit and long-time behavior" at the workshop "Kick-off meeting del progetto PRIN PNRR 2022 Mathematical Modeling of Biodiversity in the Mediterranean Sea: from bacteria to predators, from meadows to currents", Palermo, 26-28 May 2024.

(36) On 07-06-2024, he had the talk "Nonlocal conservation laws: singular limit and long-time behavior" at the online workshop "One-parameter semigroups of operators 2024: stochastics and dynamics", 03-07 June 2024.

(37) From the 18th to the 20th of March 2025 in Besançon (France) he had the course "Compensated compactness for conservation laws" as a part of the "Spring School on Conservation Laws and Applications at LmB".

(38) On 11-09-2025, he had the talk "Long-time behaviour of damped adhesive strings" at the workshop "Frontiers in Calculus of Variations and Applied Analysis", Munich, 08-12 September 2025.

(39) On 24-09-2025, he had the talk "Long-time behaviour of damped adhesive strings" at the workshop "Hyperbolic Problems in Nürnberg", Nürnberg, 24-26 September 2025.

(40) On 11-04-2026, he had the talk "Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case" at the workshop "The International Workshop on Recent Trends on Nonlinear Hyperbolic Conservation Laws", Beijing (China), 10-12 April 2026.

(41) On 18-06-2026, he had the talk "Long-time behaviour of damped adhesive strings" at the workshop "Nonlinear Evolution Equations and Control: celebrating Alberto's 70th birthday", Padova (Italy), 15-19 June 2026.

(42) On ??-12-2026, he had the talk "Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case" at the workshop "Modern Approaches to Calculus of Variations and Applications", Lecce (Italy), 17-18 December 2026.

(43) From the 25th to the 31st of Jannuary 2027 online he had the course "Compensated compactness for conservation laws" as a part of the "Ukraine-NASTRAN Winter School on Nonlinear PDEs".

He was invited to participated the following ones.

(1) "Hyperbolic Conservation Laws", Oberwolfach (Germany) 4-10 April 2004.

(2) "Joint Summer Research Conference on Control Methods in PDE-Dynamical Systems", Snowbird (Utah, U.S.A.) 3-7 July 2005.

(3) "Conference on Control of PDE's", CIRM Marseille (France) 25-29 January 2010.

(4) "Nonlinear Conservation Laws and Related Models", BIRS Banff (Alberta, Canada) 9-14 June 2013.

10. Seminars

(1) By invitation of Prof. R. M. Colombo, on 5-12-2001, he had the seminar "A Conservation Traffic Model on a Net" in Dipartimento di Matematica of Facoltà di Ingegneria of the Università degli Studi di Brescia (Italy).

(2) By invitation of Prof. V. Georgiev, on 25-1-2002, he had the seminar "A Mathematical Model of Traffic Flow on a Network" in Dipartimento di Matematica of the Università degli Studi di Pisa (Italy).

(3) By invitation of Prof. D. Fortunato, on 3-7-2002, he had the seminar "Un modello fluidodinamico di traffico su reti stradali" in Dipartimento di Matematica of the Università degli Studi di Bari (Italy).

(4) By invitation of Prof. N. H. Risebro, on 18-10-2002, he had the seminar "An Introduction to Hyperbolic Conservation Laws" in Department of Mathematics of the University of Oslo (Norway).

(5) By invitation of Prof. N. H. Risebro, on 30-10-2002, he had the seminar "On the Boundary Control of Systems of Conservation Laws" in Department of Mathematics of the University of Oslo (Norway).

(6) By invitation of Prof. H. Holden, on 12-11-2002, he had the seminar "On the Boundary Control of Systems of Conservation Laws" in Department of Mathematical Sciences of the Norwegian University of Science and Technology in Trondheim (Norway).

(7) By invitation of Prof. V. Georgiev, on 13-12-2002, he had the seminar "On the Boundary Control of Systems of Conservation Laws" in Dipartimento di Matematica of the Università degli Studi di Pisa (Italy).

(8) By invitation of Prof. N. H. Risebro, on 21-5-2003, he had the seminar "On the Boundary Controllability of a Linear System of Hyperbolic Equations" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(9) By invitation of Prof. H. Holden, on 26-5-2003, he had the seminar "On the Boundary Controllability of a Linear System of Hyperbolic Equations" in Department of Mathematical Sciences of the Norwegian University of Science and Technology in Trondheim (Norway).

(10) By invitation of Prof. K. H. Karlsen, on 30-3-2004, he had the seminar "Solitary Waves for the Maxwell-Schrödinger Equations" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(11) By invitation of Prof. H. Holden, on 14-5-2004, he had the seminar "Solitary Waves for the Maxwell-Schrödinger Equations" in Department of Mathematical Sciences of the Norwegian University of Science and Technology in Trondheim (Norway).

(12) By invitation of Prof. A. Szepessy, on 2-6-2004, he had the seminar "An Overview of Boundary Control Problems for Systems of Conservation Laws" in Department of Numerical Analysis and Computer Science of KTH - Royal Institute of Technology in Stockholm (Sweden).

(13) By invitation of Prof. A. Constantin, on 22-7-2004, he had the seminar "On the Wellposedness for a Generalized Hyperelastic-Rod Wave Equation" in Centre for Mathematical Sciences of Lund University in Lund (Sweden).

(14) By invitation of Prof. P. C. Moan, on 11-11-2004 , he had the seminar "Introduction to the Critical Point Theory" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(15) By invitation of Prof. P. C. Moan, on 18-11-2004, he had the seminar "Nonlinear Schrodinger Equation: the Critical Point Approach" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(16) By invitation of Prof. K. H. Karlsen, on 08-09-2005, he had the seminar "Hammerstein Integral Equation with Singular Nonlinear Term" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(17) By invitation of Prof. H. Kalisch, on 22-09-2005, he had the seminar "Global Weak Solutions to a Generalized Hyperelastic-Rod Wave Equation" in Department of Mathematics of the University of Bergen (Norway).

(18) By invitation of Prof. C. De Lellis, on 27-10-2005, he had the seminar "Global Weak Solutions to a Generalized Hyperelastic-Rod Wave Equation" in Department of Mathematics of the University of Zürich (Swizerland).

(19) By invitation of Prof. S. Albeverio, on 12-1-2006, he had the seminar "The Schr̈odinger - Maxwell system with Dirac mass" in Department of Mathematics of the University of Bonn (Germany).

(20) By invitation of Prof. K. H. Karlsen, on 11-5-2006, he had the seminar "The Schr̈odinger - Maxwell system with Dirac mass" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(21) By invitation of Prof. J. A. Goldstein, on 8-2-2007, he had the seminar "Discontinuous Solutions for the Degasperis-Procesi equation" in Dipartment of Mathematical Sciences of the University of Memphis in Memphis (Tennessee, U.S.A.).

(22) By invitation of of Prof. A. Bressan, on 12-2-2007, he had the seminar "Discontinuous Solutions for the Degasperis-Procesi equation" in Department of Mathematics of Penn State University in State College (Pennsylvania, U.S.A.).

(23) By invitation of Prof. N. H. Risebro, on 07-05-2007, he had the seminar "Discontinuous Solutions for the Degasperis-Procesi equation" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(24) By invitation of Prof. F. Paparella, on 04-10-2007, he had the seminar "L'equazione di Camassa-Holm" in Department of Mathematics of University of Lecce (Italy).

(25) By invitation of Prof. E. Presutti, on 17-10-2007, he had the seminar "L'equazione di Camassa-Holm" in Department of Mathematics of University of Rome 2 "Tor Vergata" (Italy).

(26) By invitation of Prof. V. Sciacca, on 25-01-2008 he had the seminar "Soluzioni Limitate dell'Equazione di Degasperis - Procesi" in Department of Mathematics of University of Palermo (Italy).

(27) By invitation of Prof. N. H. Risebro, on 20-05-2008, he had the seminar "Conservation Laws with Singular Nonlocal Sources" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(28) By invitation of Prof. H. Holden, on 27-05-2008, he had the seminar "Conservation Laws with Singular Nonlocal Sources" in Department of Mathematical Sciences of the Norwegian University of Science and Technology in Trondheim (Norway).

(29) By invitation of Prof. F. Oliveri, on 17-06-2008 he had the seminar "Soluzioni Limitate dell'Equazione di Degasperis - Procesi" in Department of Mathematics of University of Messina (Italy).

(30) By invitation of Prof. S. Calogero, on 09-03-2009 he had the seminar "Conservation Laws with Singular Nonlocal Sources" in Departamento de Matemàtica Aplicada of Universidad de Granada (Spain).

(31) By invitation of Prof. S. Calogero, on 13-03-2009 he had the seminar "The Schr̈odinger - Maxwell system with Dirac mass" in Departamento de Matemàtica Aplicada of Universidad de Granada (Spain).

(32) By invitation of Prof. S. Secchi, on 16-03-2009 he had the seminar "The Schr̈odinger - Maxwell system with Dirac mass" in Dipartimento di Matematica e Applicazioni of Università di Milano Bicocca (Italy).

(33) By invitation of Prof. K. H. Karlsen, on 24-04-2009 he had the seminar "The initial - boundary value problem for the Degasperis-Procesi equation" in the Centre for Advanced Study (CAS) of the Norwegian Academy of Science and Letters in Oslo (Norway).

(34) By invitation of Prof. A. Bressan, on 22-03-2010 he had the seminar "Conservation Laws with Singular Nonlocal Sources" in Department of Mathematics of Penn State University in State College (Pennsylvania, U.S.A.).

(35) By invitation of Prof. A. Bressan, on 30-03-2010 he had the seminar "The Schr̈odinger - Maxwell system with Dirac mass" in Department of Mathematics of Penn State University in State College (Pennsylvania, U.S.A.).

(36) By invitation of Prof. J. A. Goldstein, on 09-04-2010 he had the seminar "The Schr̈odinger - Maxwell system with Dirac mass" in Dipartment of Mathematical Sciences of the University of Memphis in Memphis (Tennessee, U.S.A.).

(37) By invitation of Prof. N. H. Risebro, on 25-05-2010, he had the seminar "Vanishing viscosity on networks" in Centre of Mathematics for Applications (CMA) in Oslo (Norway).

(38) By invitation of Prof. S. Mishra, on 14-09-2010, he had the seminar "Vanishing viscosity on networks" in Seminar für Angewandte Mathematik of ETH in Zurich (Switzerland).

(39) By invitation of Prof. E. Zuazua, on 29-09-2010, he had the seminar "Vanishing viscosity on networks" in Basque Center for Applied Mathematics (BCMA) in Bilbao (Spain).

(40) By invitation of Prof. F. Ancona, on 24-02-2011, he had the seminar "Vanishing viscosity su reti" in Dipartimento di Matematica Pura ed Applicata of the Università di Padova (Italy).

(41) By invitation of Prof. N. H. Risebro, on 25-03-2011, he had the seminar "The Schr̈odinger - Maxwell system with Dirac mass" in Centre of Mathematics for Applications (CMA) in Oslo (Norvegia).

(42) By invitation of Prof. C. M. Dafermos, on 22-04-2011, he had the seminar "Vanishing viscosity on networks" in Division of Applied Mathematics of Brown University in Providence (Rhode Island, U.S.A.).

(43) By invitation of Prof. K. Trivisa, on 28-04-2011, he had the seminar "Vanishing viscosity on networks" in Department of Mathematics of University of Maryland in College Park (Maryland, U.S.A.).

(44) By invitation of Prof. J. A. Goldstein, on 04-05-2011, he had the seminar "Vanishing viscosity on networks" in Dipartment of Mathematical Sciences of University of Memphis in Memphis (Tennessee, U.S.A.).

(45) By invitation of Prof. P. Marcati, on 30-06-2011, he had the seminar "An optimal harvesting problem with measure valued solutions" in Dipartimento di Matematica Pura ed Applicata of Università de L'Aquila (Italy).

(46) By invitation of Prof. F. Ancona, on 24-02-2012, he had the seminar "An optimal harvesting problem with measure valued solutions" in Dipartimento di Matematica Pura ed Applicata of the Università di Padova (Italy).

(47) By invitation of Prof. S. Terracini, on 08-03-2012, he had the seminar "An optimal harvesting problem with measure valued solutions" in Dipartimento di Matematica e Applicazioni of the Università di Milano Bicocca.

(48) By invitation of Prof. S. Mishra, on 20-03-2012, he had the seminar "An optimal harvesting problem with measure valued solutions" in Centre of Mathematics for Applications (CMA) in Oslo (Norvegia).

(49) By invitation of Prof. Radu C. Cascaval, on 10-05-2012, he had the seminar "Vanishing viscosity on networks" in Department of Mathematics of the University of Colorado at Colorado Spring in Colorado Spring (Colorado, U.S.A.).

(50) By invitation of Prof. K. Trivisa, on 24-05-2012, he had the seminar "An optimal harvesting problem with measure valued solutions" in Department of Mathematics of the University of Maryland in College Park (Maryland, U.S.A.).

(51) By invitation of Prof. F. Ancona, on 14-02-2013, he had the seminar "Systems with moving boundaries" in Dipartimento di Matematica Pura ed Applicata of the Università di Padova (Italy).

(52) By invitation of Prof. S. Mishra, on 27-02-2013, he had the seminar "Systems with moving boundaries" in Seminar für Angewandte Mathematik of ETH in Zurich (Switzerland).

(53) By invitation of Prof. N. H. Risebro, on 19-03-2013, he had the seminar "Systems with moving boundaries" in Department of Mathematics of the University of Oslo (Norway).

(54) By invitation of Prof. A. Bressan, on 23-04-2013, he had the seminar "Systems with moving boundaries" in Department of Mathematics of the Penn State University in State College (Pennsylvania, U.S.A.).

(55) By invitation of Prof. M. Garavello, on 23-05-2013, he had the seminar "Systems with moving boundaries" in Dipartimento di Matematica e Applicazioni of the Università di Milano Bicocca.

(56) By invitation of Prof. N. H. Risebro, on 14-01-2014, he had the seminar "An evolutive optimal harvesting problem with measure valued solutions" in Department of Mathematics of the University of Oslo (Norway).

(57) By invitation of Prof. F. Ancona, on 12-02-2014, he had the seminar "An evolutive optimal harvesting problem with measure valued solutions" in Dipartimento di Matematica Pura ed Applicata of the Università di Padova (Italy).

(58) By invitation of Prof. L. Spinolo, on 27-03-2014, he had the seminar "An evolutive optimal harvesting problem with measure valued solutions" in Department of Mathematics of the University of Pavia (Italy).

(59) By invitation of Prof. C. Donadello, on 12-06-2014, he had the seminar "An evolutive optimal harvesting problem with measure valued solutions" in Laboratoire de Mathématiques de Besançon dell'Université de Franche-Comté (France).

(60) By invitation of Prof. A. Corli, on 26-06-2014, he had the seminar "Un problema di pesca ottimale con soluzioni a valori misura" in Department of Mathematics of the University of Ferrara (Italy).

(61) By invitation of Prof. M. Garavello, on 23-09-2014, he had the seminar "An evolutive optimal harvesting problem with measure valued solutions" in Dipartimento di Matematica e Applicazioni of the Università di Milano Bicocca.

(62) By invitation of Prof. F. Paparella, on 21-10-2014, he had the seminar "An evolutive optimal harvesting problem with measure valued solutions" in Department of Mathematics of University of Lecce (Italy).

(63) By invitation of Prof. L. Spinolo, on 19-02-2015, he had the seminar "Hyperbolic-Elliptic models for two-phase flow in porous media" in Department of Mathematics of the University of Pavia (Italy).

(64) By invitation of Prof. C. D'Apice, on 19-05-2015, he had the seminar "Hyperbolic-Elliptic models for two-phase flow in porous media" in Department of Mathematics of the University of Salerno (Italy).

(65) By invitation of Prof. M. Garavello, on 10-06-2015, he had the seminar "Hyperbolic-Elliptic models for two-phase flow in porous media" in Dipartimento di Matematica e Applicazioni of the Università di Milano Bicocca.

(66) By invitation of Prof. A. Corli, on 18-06-2015, he had the seminar "Hyperbolic-Elliptic models for two-phase flow in porous media" in Department of Mathematics of the University of Ferrara (Italy).

(67) By invitation of Prof. F. Ancona, on 23-09-2019, he had the seminar "Hyperbolic-Elliptic models for two-phase flow in porous media" in Dipartimento di Matematica Pura ed Applicata of the Università di Padova (Italy).

(68) By invitation of Prof. N. H. Risebro, on 22-01-2016, he had the seminar "Hyperbolic-Elliptic models for two-phase flow in porous media" in Department of Mathematics of the University of Oslo (Norway).

(69) By invitation of Prof. V. Sciacca, on 31-05-2016 he had the seminar "A model for the morphogens evolution in a growing tissue" in Department of Mathematics of University of Palermo (Italy).

(70) By invitation of Prof. F. Paparella, on 23-11-2016 he had the seminar "A model for the morphogens evolution in a growing tissue" in Department of Mathematics of New York University - Abu Dhabi (United Arab Emirates).

(71) By invitation of Prof. U. S. Fjordholm, on 21-02-2018 he had the seminar "Nonlinear Peridynamic Models" in Department of Mathematics of the University of Oslo (Norway).

(72) By invitation of Prof. U. S. Fjordholm, on 28-01-2019 he had the seminar "Double-Diffusion Convection: the case of Salt Fingers" in Department of Mathematics of the University of Oslo (Norway).

(73) By invitation of Prof. A. Aguglia, on 27-02-2019 he had the seminar "Modelli Fluidodinamici di Traffico" in Department of Mechanics, Mathematics and Management of the Polytechnic University of Bari.

(74) By invitation of Prof. C. Donadello, on 02-05-2019, he had the seminar "Nonlinear Peridynamic Models" in Laboratoire de Mathématiques de Besançon dell'Université de Franche-Comté (France).

(75) By invitation of Prof. B. Andreianov, on 09-05-2019 he had the seminar "Nonlinear Peridynamic Models" in Laboratoire de Mathématiques et Physique Théorique of the Université de Tours (France).

(76) By invitation of Prof. N. Visciglia, on 9-9-2019, he had the seminar "Nonlinear Peridynamic Models" in Dipartimento di Matematica of the Università degli Studi di Pisa (Italy).

(77) By invitation of Prof. I. Gasser, on 16-1-2020, he had the seminar "Nonlinear Peridynamic Models" in the context of the Lothar-Collatz-Kolloquium on Applied Mathematics of the University of Hamburg (Germany).

(78) By invitation of Prof. F. Tomarelli, on 22-1-2020, he had the seminar "Nonlinear Peridynamic Models" Dipartimento di Matematica of the Politecnico di Milano (Italy).

(79) By invitation of Prof. U. S. Fjordholm, on 18-02-2020 he had the seminar "Measure valued solutions for an evolutive optimal harvesting problem" in Department of Mathematics of the University of Oslo (Norway).

(80) By invitation of Prof. E. Zuazua, on 15-07-2020 he had the online seminar "Nonlinear Peridynamic Models" in Department of Mathematics of the Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany).

(81) By invitation of Prof. D. Mugnolo, on 17-03-2021 he had the online seminar "Nonlinear Peridynamic Models" in Department of Mathematics of the FernUniversität at Hagen (Germany).

(82) By invitation of Prof. G. Molica Bisci, on 04-11-2021 he had the seminar "Nonlinear Peridynamic Models" in Department of Mathematics of the University of Urbino (Italy).

(83) By invitation of Prof. U. S. Fjordholm, on 08-02-2022 he had the seminar "Nonlocal regularization of conservation laws" in Department of Mathematics of the University of Oslo (Norway).

(84) By invitation of Prof. C. Donadello, on 03-03-2022, he had the seminar "Nonlocal regularization of conservation laws" in Laboratoire de Mathématiques de Besançon dell'Université de Franche-Comté (France).

(85) By invitation of Prof. A. Bressan, on 30-03-2022, he had the seminar "Nonlinear Peridynamic Models" in Department of Mathematics of Penn State University in State College (Pennsylvania, U.S.A.).

(86) By invitation of Prof. E. Zuazua, on 03-05-2022 he had the seminar "Nonlocal regularization of conservation laws" in Department of Mathematics of the Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany).

(87) By invitation of Prof. U. S. Fjordholm, on 01-02-2023 he had the seminar "Adhesion and decohesion in a thermoelastic continuum" in Department of Mathematics of the University of Oslo (Norway).

(88) By invitation of Prof. I. Gasser, on 30-03-2023, he had the seminar "Fluid-dynamic traffic models" in the context of the HIAS Colloquium in Hamburg (Germany).

(89) By invitation of Prof. I. Gasser, on 20-04-2023, he had the seminar "Nonlocal regularization of conservation laws" in the context of the Lothar-Collatz-Kolloquium on Applied Mathematics of the University of Hamburg (Germany).

(90) By invitation of Prof. V. Sciacca, on 27-10-2023 he had the seminar "Nonlinear Peridynamic Models" in Department of Mathematics of University of Palermo (Italy).

(91) By invitation of Prof. F. Ancona, on 09-01-20124, he had the seminar "Nonlinear Peridynamic Models" in Dipartimento di Matematica Pura ed Applicata of the Università di Padova (Italy).

(92) By invitation of Prof. H. A. Hoel, on 15-02-2024 he had the seminar "Long-time behavior of scalar conservation laws" in Department of Mathematics of the University of Oslo (Norway).

(93) By invitation of Prof. M. T. Chiri, on 12-03-2024 he had the seminar "Nonlocal conservation laws: singular limit and long-time behavior" in Department of Mathematics and Statistics of the Queen's University (Canada).

(94) By invitation of Prof. G. Mingione, on 04-04-2024 he had the seminar "Nonlinear Peridynamic Models" in Dipartimento di Scienze Matematiche, Fisiche e Informatiche of the Università di Parma (Italy).

(95) By invitation of Prof. M. Colombo, on 19-04-2024 he had the seminar "Nonlinear Peridynamic Models" in Institute of Mathematics of the EPFL in Lausanne (Switzerland).

(96) By invitation of Prof. A. Borzì, on 13-06-2024 he had the seminar "Nonlinear Peridynamic Models" in Institute of Mathematics of the Julius-Maximilians-Universität in Würzburg (Germany).

(97) By invitation of Prof. L. Berselli, on 27-06-2024 he had the seminar "Nonlinear Peridynamic Models" in Dipartimento di Matematica of the Università degli Studi di Pisa (Italy).

(98) By invitation of Prof. I. Gasser, on 14-11-2024, he had the seminar "Measure valued solutions for an optimal harvesting problem" in the context of the Lothar-Collatz-Kolloquium on Applied Mathematics of the University of Hamburg (Germany).

(99) By invitation of Prof. P. Salani, on 08-01-2025 he had the seminar "Measure valued solutions for an optimal harvesting problem" in Dipartimento di Matematica of the Università degli Studi di Firenze (Italy).

(100) By invitation of Prof. H. C. Pang, on 28-01-2025 he had the seminar "Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case" in Department of Mathematics of the University of Oslo (Norway).

(101) By invitation of Prof. M. T. Chiri, on 14-03-2025 he had the Colloquium "Measure valued solutions for an optimal harvesting problem" in Department of Mathematics and Statistics of the Queen's University (Canada).

(102) By invitation of Prof. M. T. Chiri, on 14-03-2025 he had the seminar "Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case" in Department of Mathematics and Statistics of the Queen's University (Canada).

(103) By invitation of Prof. C. Nobili, on 12-06-2025 he had the seminar "Nonlocal regularization of conservation laws" in Dipartimento di Matematica of the University of Surrey (UK).

(104) By invitation of Prof. M. Herty, on 10-07-2025 he had the seminar "Nonlocal regularization of conservation laws" in Dipartimento di Matematica of the RWTH Aachen University (Germany).

(105) By invitation of Prof. G. Mingione on 07-01-2026 he had the seminar "Nonlocal regularization of conservation laws" in Dipartimento di Scienze Matematiche, Fisiche e Informatiche dell'Università di Parma.

(106) By invitation of Prof. K. H. Karlsen on 23-01-2026 he had the seminar "Long-time behaviour of damped adhesive strings" in Department of Mathematics de University of Oslo (Norvegia).

(107) By invitation of Prof. L. Biasco on 17-02-2026 he had the seminar "Nonlocal regularization of conservation laws" in Dipartimento di Matematica e Fisica dell'Università di Roma 3.

(108) By invitation of Prof. C. Donadello on 26-02-2026 he had the seminar "Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case" in Laboratoire de Mathématiques de Besançon dell'Université de Franche-Comté (France).

(109) By invitation of Prof. I. Gasser, on 21-05-2026, he had the seminar "Mathematical Models: why and how" in the context of the HIAS Colloquium in Hamburg (Germany).

(110) By invitation of Prof. I. Gasser, on 28-05-2026, he had the seminar "Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case" in the context of the PDE and Applied Mathematics Seminar of the University of Hamburg (Germany).

(111) By invitation of Prof. J. Limaco, on 15-07-2026, he had the online seminar "Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case" in the context of the Lothar-Collatz-Kolloquium on Applied Mathematics of the Fluminense Federal University (Brasil).

(112) By invitation of Prof. C. De Filippis on 09-10-2026 he had the seminar "Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case" in Dipartimento di Scienze Matematiche, Fisiche e Informatiche dell'Università di Parma.

11. Contributed Talks

(1) On 22-11-2001, he had the talk "Controllabilità alla Frontiera per Sistemi di Leggi di Conservazione" at the workshop "IPERCT2001 Problemi di Tipo Iperbolico IX Incontro Nazionale" Catania (Italy) 22-24 / 11 / 2001.

(2) On 25-3-2002, he had the talk "On the Boundary Control of Systems of Conservation Laws" at the workshop "Ninth International Conference on Hyperbolic Problems Theory, Numerics, Applications" Pasadena (California, U.S.A.) 25-29/3/2002.

(3) On 8-6-2002, he had the talk "On the Attainable set for Temple Class Systems with Boundary Control" at the workshop "Advances on Nonlinear PDEs" L'Aquila (Italy) 5-8 / 6 / 2002.

(4) On 8-4-2004, he had the talk "On the Existence of Weak Solutions for the Generalized Camassa-Holm Equation" at the workshop "Hyperbolic Conservation Laws" Oberwolfach (Germany) 4-10 April 2004.
(5) On 16-4-2004, he had a talk in the session "Midterm review" at the workshop "Around HYperbolic and Kinetic Equations 2" 14-17 April 2004 Paris (France).
(6) On 22-9-2004, he had the talk "On a shallow water equation" at the workshop "Internal CMA Workshop" 21-22 September 2004 Oslo (Norway).
(7) On 21-6-2005, he had the talk "On a Generalized Hyperelastic-Rod Wave Equation" at the workshop "XIII International Conference on Waves and Stability in Continuous Media WASCOM-2005" 19-25 June 2005 Acireale (Catania, Italy).
(8) On 17-7-2006, he had the talk "Discontinuous Solutions for the Degasperis-Procesi equation" at the workshop "Eleventh International Conference on Hyperbolic Problems Theory, Numerics, Applications" 17-21July 2006 Lyon (France).
(9) On 14-9-2006, he had the talk "Discontinuous Solutions for the Degasperis-Procesi equation" at the workshop "IPERPD2006 12th Meeting on Hyperbolic Equations" 17-21September 2006 Padova (Italy).
(10) On 18-2-2011, he had the talk "Vanishing viscosity su reti" at the workshop "iPerMe11 XIV Incontro Nazionale Problemi di Tipo Iperbolico", Messina (Italy), 16 - 18 February 2011.
(11) On 7-5-2011, he had the talk "Vanishing viscosity on networks" at the workshop "2011 Differential Equations Weekend Conference", Starkville, MS (U.S.A.), 7 May 2011.
(12) On 26-6-2012, he had the talk "Asymptotic stabilization of the hyperelastic-rod wave equation" at the workshop "Fourteenth International Conference on Hyperbolic Problems Theory, Numerics, Applications" 25-29 June 2012 Padova (Italy).
(13) On 11-9-2013, he had the talk "Systems with moving boundaries" at the workshop "IperMiB2013: 15th Italian Meeting on Hyperbolic Equations"', Milano (Italy), 11-13 September 2013.

12. Teaching Activity

In the academic year 2004/2005

1 he colallaborated with Professor K. H. Karlsen for the course "Partial Differential Equations and Sobolev Spaces-part II" for the master degree in Mathematics in the University of Oslo (Norway);
2 he had the seminar series "One Dimensional Scalar Conservation Laws" for the Ph.D. degree in Mathemathics in the University of Trondheim (Norway).

In the academic year 2005/2006

1 he had the course "Istituzioni di Matematiche II" of the bachelor degree in Chemical Technologies of the University of Bari (Italy);

2 he had the exercises for the course "Istituzioni di Matematiche I" of the bachelor degree in Chemistry of the University of Bari (Italy).

In the academic year 2006/2007

1 he had the course "Complementi di Matematica" of the master degree in Electronic Engineering of the Polytechnic University of Bari (Italy);

2 he had the exercises for the courses "Istituzioni di Matematiche I" of the bachelor degree in Chemistry and "Analisi Matematica" of the bachelor degree in Informatics of the University of Bari (Italy).

In the academic years 2007/2008 and 2008/2009

1 he had the exercises for the courses "Istituzioni di Matematiche I" of the bachelor degrees in Chemistry and Material Sciences of the University of Bari (Italy).

In the academic year 2009/2010

1 he had the exercises for the courses "Istituzioni di Matematiche I" of the bachelor degrees in Chemistry and Material Sciences, "Analisi matematica 3" of the bachelor degree Mathematics of the University of Bari (Italy);

2 he had the course "Partial Differential Equations" of the PhD degree in Mathematics of the University of Bari (Italy).

In the academic year 2010/2011

1 he had the exercises for the courses "Istituzioni di Matematiche I" of the bachelor degree in Chemistry, "Analisi Matematica" of the bachelor degree in Informatics, "Analisi matematica 3" of the bachelor degree in Physics of the University of Bari (Italy);

2 he had the course "Partial Differential Equations" of the PhD degree in Mathematics of the University of Bari (Italy).

In the academic year 2011/2012

1 he had the exercises for the courses "Istituzioni di Matematiche I" of the bachelor degree in Chemistry, "Matematica" of the bachelor degree in Geology, "Analisi matematica 3" of the bachelor degree in Physics of the University of Bari (Italy).

In the academic year 2012/2013

1 he had the exercises for the courses "Istituzioni di Matematiche I" of the bachelor degree in Chemistry, "Matematica" of the bachelor degree in Geology, "Analisi matematica 3" of the bachelor degree in Physics of the University of Bari (Italy);

2 he had the course "Partial Differential Equations" of the PhD degree in Mathematics of the University of Bari (Italy) and the course "Didattica dei Modelli Matematici" for the TFA in Applied Mathematics.

In the academic years 2013/2014, 2014/2015, 2015/2016

1 he had the courses "Matematica" of the bachelor degree in Geology, "Metodi Analitici in Finanza" of the master degree in Mathematics of the University of Bari (Italy);

2 he had the course “Partial Differential Equations” of the PhD degree in Mathematics of the University of Bari (Italy).

In the academic year 2016/2017

1 he had the course “Matematica” of the bachelor degree in Geology of the University of Bari (Italy);

2 he had the course “Partial Differential Equations” of the PhD degree in Mathematics of the University of Bari (Italy).

In the academic year 2017/2018

1 he had the course “Analisi Matematica” of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy);

2 he had the excellence course “Conservation Laws and Traffic Models” for the PhD program in Mathematics of the Polytechnic University of Torino.

In the academic years 2018/2019 and 2019/2020

1 he had the course “Analisi Matematica” of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy).

In the academic years 2020/2021 and 2023/2024

1. he had the course “Analisi Matematica” of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy);

2. he had the course “Analytical and Statistical Methods for Engineering” of the master degree in Mechanical Engineering of the Polytechnic University of Bari (Italy);

3. he had the course “Conservation laws in continuum mechanics and traffic modeling” of the PhD School of the Polytechnic University of Bari (Italy).

In the academic year 2021/2022

1. he had the course “Analisi Matematica” of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy);

2. he had the course “Analytical and Statistical Methods for Engineering” of the master degree in Mechanical Engineering of the Polytechnic University of Bari (Italy).

In the academic year 2022/2023

1. he had the course “Analisi Matematica” of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy);

2. he had the course “Optimal Control” of the PhD School of the Polytechnic University of Bari (Italy).

In the academic year 2023/2024

1. he had the course “Analisi Matematica” of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy);

2. he had the course “Analytical and Statistical Methods for Engineering” of the master degree in Mechanical Engineering of the Polytechnic University of Bari (Italy);

3. he had the course "Conservation laws in continuum mechanics and traffic modeling" of the PhD School of the Polytechnic University of Bari (Italy).

In the academic year 2024/2025

1. he had the course "Analisi Matematica" of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy);
2. he had the course "Analytical and Statistical Methods for Engineering" of the master degree in Mechanical Engineering of the Polytechnic University of Bari (Italy);
3. he had the course "Optimal Control" of the PhD School of the Polytechnic University of Bari (Italy).

In the academic year 2025/2026

1. he had the course "Analisi Matematica" of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy);
2. he had the course "Conservation laws in continuum mechanics and traffic modeling" of the PhD School of the Polytechnic University of Bari (Italy).

In the academic year 2026/2027

1. he had the course "Analisi Matematica" of the bachelor degree in Inegneering of the Polytechnic University of Bari (Italy);
2. he had the course "Optimal Control" of the PhD School of the Polytechnic University of Bari (Italy);

13. Referee and Reviewer

He was referee for the SIAM Journal on Scientific Computing, Journal of Differential Equations, Journal of Mathematical Analysis and Applications, Journal of Engineering Mathematics, Journal of Hyperbolic Differential Equations, SIAM Journal on Control and Optimization, Physics Letters A, Communications on Pure and Applied Analysis, Advanced Nonlinear Studies, Journal of Nonlinear Mathematical Physics, SIAM J. Numer. Anal., Differential and Integral Equations, Nonlinear Analysis Series A: Theory, Methods & Applications, Acta Applicanda Mathematicae, Nonlinearity, Mathematical Methods in the Applied Sciences, Mathematical Modelling and Analysis, Journal of Mathematical Physics, Journal of Dynamical and Control Systems, Nonlinear Differential Equations and Applications NoDea, Mathematical Problems in Engineering, Proceedings of the AMS, Discrete and Continuous Dynamical Systems - A/B, Advances in Numerical Analysis, Journal of Evolution Equations, Communications on Mathematical Physics, Bulletin of the London Mathematical Society, Networks and Heterogeneous Media, Zeitschrift fuer Angewandte Mathematik und Physik, Journal of Functional Analysis, Numerische Mathematik, Annales Henri Poincaré, Modelling and Simulation in Engineering, Boundary Value Problems, Proceedings of the London Mathematical Society, Zeitschrift fuer Angewandte Mathematik und Mechanik, SIAM Journal on Applied Mathematics, Journal for Analysis and Applications, Applicable Analysis, SIAM Journal on Mathematical Analysis, Mathematics of Control, Signals, and Systems,

Nonlinear Analysis Series B: Real World Applications, Journal of the London Mathematical Society, Advances in Mathematical Physics, Advances in Difference Equations, Acta Mathematica Scientia, Computers and Mathematics with Applications, The European Physical Journal - Plus, Annali dell'Università di Ferrara, Journal of Advanced Transportation, Journal of Mathematical Fluid Mechanics, Annales de l'Institut Henri Poincaré (C) Analyse Non Linéaire, Applied Mathematics Letters, Journal of Computational Mathematics, Proceedings of the Royal Society of Edinburgh. Section A. Mathematics, BIT Numerical Mathematics, International Journal of Non-Linear Mechanics, Springer INdAM Series, Annals of PDE, Rocky Mountain Mathematics Journal, Applied Numerical Mathematics, Communications in Mathematical Sciences, Chaos, Journal of Physics Communications, Philosophical Transactions of the Royal Society A, Numerical Algorithms, Calculus of Variations and Partial Differential Equations, Indiana University Mathematical Journal, Journal of Dynamics and Differential Equations, Proceedings of the Royal Society A, Communications in Partial Differential Equations, Journal of the European Mathematical Society, Journal de Mathématiques Pures et Appliquées.

From the June 2003 he is Reviewer for the Mathematical Reviews.

From the March 2020 he is Reviewer for the Zentralblatt MATH.

14. Long Visits in Foreign Universities

From 24-9-2002 to 30-11-2002 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor N. H. Risebro.

From 5-5-2003 to 31-5-2003 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norway) by invitation of Professor N. H. Risebro.

From 1-5-2006 to 13-5-2006 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 25-4-2007 to 8-5-2007 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 27-4-2008 to 3-6-2008 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norway) by invitation of Professor N. H. Risebro.

From 16-4-2010 to 7-4-2010 he visited the Department of Mathematics of Penn State University (USA) by invitation of Professor A. Bressan.

From 2-5-2010 to 29-5-2010 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norvegia) by invitation of Professor K. H. Karlsen.

From 13-3-2011 to 2-4-2011 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norvegia) by invitation of Professor K. H. Karlsen.

From 8-5-2011 to 28-5-2011 he visited the Department of Mathematics of Penn State University (USA) by invitation of Professor A. Bressan.

From 18-3-2012 to 31-3-2012 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norvegia) by invitation of Professor K. H. Karlsen.

From 16-4-2012 to 4-5-2012 he visited the Department of Mathematics of Penn State University (USA) by invitation of Professor A. Bressan.

From 14-5-2012 to 26-5-2012 he visited the Department of Mathematics of University of Maryland (USA) by invitation of Professor K. Trivisa.

From 11-03-2013 to 22-03-2013 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norway) by invitation of Professor N. H. Risebro.

From 21-04-2013 to 11-05-2013 he visited the Department of Mathematics of Penn State University (USA) by invitation of Professor A. Bressan.

From 12-01-2014 to 24-01-2014 he visited the Centre of Mathematics for Applications (CMA) of the University of Oslo (Norway) by invitation of Professor N. H. Risebro.

From 12-01-2015 to 23-01-2015 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor N. H. Risebro.

From 10-01-2016 to 22-01-2016 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor N. H. Risebro.

From 08-01-2017 to 20-01-2017 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 12-02-2018 to 24-02-2018 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 20-01-2019 to 02-02-2019 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 11-03-2019 to 09-04-2019 and from 28-04-2019 to 25-05-2019 he visited the Laboratoire de Mathématiques of the Université de Franche-Comté in Besançon (France) by invitation of Professor C. Donadello.

From 09-02-2020 to 22-02-2020 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 30-01-2022 to 12-02-2022 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 27-02-2022 to 12-03-2022 he visited the Laboratoire de Mathématiques of the Université de Franche-Comté in Besançon (France) by invitation of Professor C. Donadello.

From 27-03-2022 to 09-04-2022 he visited the Department of Mathematics of Penn State University (USA) by invitation of Professor A. Bressan.

From 24-04-2022 to 07-05-2022 he visited the Department of Data Science of Friedrich-Alexander-Universitaet Erlangen-Nuernberg (Germany) by invitation of Professor E. Zuazua.

From 11-09-2022 to 24-09-2022 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 23-01-2023 to 03-02-2023 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 04-02-2024 to 17-02-2024 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 03-03-2024 to 15-03-2024 he visited the Department of Mathematics and Statistics of the Queen's University (Canada) by invitation of Professor M. T. Chiri.

From 19-01-2025 to 01-02-2025 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 03-03-2025 to 15-03-2025 he visited the Department of Mathematics and Statistics of the Queen's University (Canada) by invitation of Professor M. T. Chiri.

From 18-01-2026 to 31-01-2026 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

From 18-01-2027 to 30-01-2027 he visited the Department of Mathematics of the University of Oslo (Norway) by invitation of Professor K. H. Karlsen.

15. Research Topics

(1) Schrödinger equation.
(2) Boundary Controllability for Systems of Conservation Laws.
(3) Traffic Models.
(4) Parabolic equations.
(5) Conservation laws with discontinuous flows.
(6) Hamilton-Jacobi Equations with discontinuous Hamiltonian.
(7) Integro-differential PDEs.
(8) Numerical schemes for hyperbolic PDEs.

16. List of Publications

Theses

[1] G. M. Coclite. Metodi Variazionali Applicati allo Studio delle Equazioni di Schrödinger-Maxwell. Graduate thesis, University of Bari (1999), supervisors: Prof. D. Fortunato, M. Lazzo.

[2] G. M. Coclite. Control Problems for Systems of Conservation Laws. Ph.D. thesis, S.I.S.S.A.-Trieste (2003), supervisor: Prof. A. Bressan, opponent: Prof. J.-M. Coron.

Monographs

[1] G. M. Coclite. Scalar Conservation Laws. SpringerBriefs in Mathematics. Springer (2024).

Edited Special Issues

[1] F. Ancona, L. Caravenna, A. Cesaroni, G. M. Coclite, C. Marchi, A. Marson. Analysis and control on networks: trends and perspectives. *Netw. Heterog. Media* **12** (2017), no. 2, i–ii.

[2] G. M. Coclite. Nonlinear models in applied mathematics. *Mathematics in Engeneering*.

[3] G. M. Coclite and F. Maddalena. New Mathematical Trends in the study of materials behavior. *Advances in Continuous and Discrete Models*.

[4] B. Andreianov, G. M. Coclite, C. Donadello, and N. Igbida. Mathematical modeling, Analysis and Approximation of Vehicular and Pedestrian Dynamics. *Zeitschrift für angewandte Mathematik und Physik*.

[5] G. M. Coclite. Nonlinear PDEs in material science. *Networks and Heterogeneous Media*.

Articles

[1] N. Alibaud, G. Coclite, M. Dalery, and C. Donadello. Vanishing viscosity versus rosenau approximation for scalar conservation laws: The fractional case. *Journal of Differential Equations*, 438:113376, 2025.

[2] D. Amadori and G. M. Coclite. A note on positive solutions for conservation laws with singular source. *Proc. Am. Math. Soc.*, 141(5):1613–1625, 2013.

[3] F. Ancona, A. Bressan, and G. M. Coclite. Some results on the boundary control of systems of conservation laws. In *Hyperbolic problems: Theory, numerics, applications. Proceedings of the ninth international conference on hyperbolic problems, Pasadena, CA, USA, March 25–29, 2002*, pages 255–264. Berlin: Springer, 2003.

[4] F. Ancona, A. Cesaroni, G. Coclite, and M. Garavello. On the structure of optimal solutions of conservation laws at a junction with one incoming and one outgoing arc. *ESAIM: Control, Optimisation and Calculus of Variations*, 32:52, 2026.

[5] F. Ancona, A. Cesaroni, G. M. Coclite, and M. Garavello. On the optimization of conservation law models at a junction with inflow and flow distribution controls. *SIAM J. Control Optim.*, 56(5):3370–3403, 2018.

[6] F. Ancona, A. Cesaroni, G. M. Coclite, and M. Garavello. On optimization of traffic flow performance for conservation laws on networks. *Minimax Theory Appl.*, 6(2):205–226, 2021.

[7] F. Ancona and G. M. Coclite. On the boundary controllability of first-order hyperbolic systems. *Nonlinear Anal., Theory Methods Appl., Ser. A, Theory Methods*, 63(5-7):e1955–e1966, 2005.

[8] F. Ancona and G. M. Coclite. On the boundary controllability of first-order hyperbolic systems. *Nonlinear Anal., Theory Methods Appl., Ser. A, Theory Methods*, 63(5-7):e1955–e1966, 2005.

[9] F. Ancona and G. M. Coclite. On the asymptotic stabilization of a generalized hyperelastic-rod wave equation. *Hyperbolic Problems: Theory, Numerics, Applications*, page 447, 2012.

[10] F. Ancona and G. M. Coclite. Existence of global weak solutions to a generalized hyperelastic-rod wave equation with source. In *New prospects in direct, inverse and control problems for evolution equations. Selected papers based on the presentations at the international conference "Differential equations, inverse problems and control theory, Cortona, Italy, June 16–21, 2013*, pages 23–47. Cham: Springer, 2014.

[11] B. Andreianov, G. M. Coclite, and C. Donadello. Conservation laws on a star-shaped graph under generalized Kedem-Katchalsky node transmission conditions. *Submitted*, 2025.

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Bari, September 28, 2026 Giuseppe Maria Coclite