Curriculum Vitæ

Debora Amadori

1. Personal information

Position:	Professor in Mathematical Analysis
Address:	Department of Information Engineering, Computer Science and Mathematics University of L'Aquila via Vetoio loc. Coppito, L'Aquila (AQ) 67010, Italy
E-mail address:	debora.amadori@univaq.it
Web page:	http://people.disim.univaq.it/~amadori/

Academic positions

- 04/2019 – present: Full professor, University of L'Aquila
- 12/2014 – 03/2019: Associate professor, University of L'Aquila
- 10/2002 – 12/2014: Assistant professor, University of L'Aquila
  (maternity leave from 06/07/2011 to 12/12/2011)
- 05/1996 – 09/2002: Assistant professor, University of Milan (Italy)

Education

- B.S. in Mathematics, University of Bologna, February 1992, full marks *cum laude*. Thesis title: *Equazioni Iperboliche a Caratteristiche Multiple*. Supervisor: Prof. C. Parenti
- Ph.D. in Mathematics, Functional Analysis and Applications, SISSA, Trieste, November 1995. Thesis title: *Existence and Continuous Dependence for Conservation Laws with Boundary*. Supervisor: Prof. A. Bressan

2. Research activity

Citation databases

- Google Scholar: [link]
- ORCID: https://orcid.org/0000-0002-8939-6552
- Scopus: https://www.scopus.com/authid/detail.uri?authorId=7005467867

Publications

Preprints and Articles in Refereed Journals

[1] D. Amadori, C. Christoforou. *Unconditional flocking for weak solutions to systems of Euler-type with all-to-all interaction kernel*, preprint 2023

[2] D. Amadori, C. Christoforou. *BV solutions for a hydrodynamic model of flocking–type with all-to-all interaction kernel.* Mathematical Models and Methods in Applied Sciences, **32** no. 11 (2022), 2295–2357 [link]
Keywords: weak solutions with vacuum; time-asymptotic behavior

[3] D. Amadori, M. Colangeli, A. Correa, L. Rondoni. *Exact Response Theory and Kuramoto dynamics*. Physica D: Nonlinear Phenomena **429**, January 2022, 133076 [link]

[4] D. Amadori, F. Aqel. *On the decay in $W^{1,\infty}$ for the 1D semilinear damped wave equation on a bounded domain. Discrete Contin. Dyn. Syst.* **41** *(2021), 5359–5396* [link]
Keywords: Damped wave equation, well-posedness in $W^{1,\infty}$, asymptotic stability, on-off damping

[5] D. Amadori, E. Dal Santo, F. Aqel. *Decay of approximate solutions for the damped semilinear wave equation on a bounded 1d domain*, J. Math. Pures Appl. **132** (2019), 166–206
Keywords: Space-dependent relaxation model, damped wave equation

[6] D. Amadori, S.-Y. Ha, J. Park. *On the global well-posedness of BV weak solutions to the Kuramoto–Sakaguchi equation*, J. Differential Equations **262** (2017), 978–1022

[7] D. Amadori, L. Gosse. *Stringent error estimates for one-dimensional, space-dependent* 2×2 *relaxation systems*, Ann. Inst. H. Poincaré Anal. Non Linéaire **33** (2016), 621–654

[8] D. Amadori, L. Gosse. *Error Estimates for Well-Balanced and Time-Split Schemes on a Locally Damped Semilinear Wave Equation*, Math. Comp. **85** (2016), 601–633

[9] D. Amadori, P. Baiti, A. Corli, E. Dal Santo. *Global existence of solutions for a multi-phase flow: a drop in a gas-tube*, J. Hyperbolic Differ. Equ. **13** (2016), 381–415

[10] D. Amadori, P. Baiti, A. Corli, E. Dal Santo. *Global weak solutions for a model of two-phase flow with a single interface*. Bull. Braz. Math. Soc. (N.S.) **47**(1) (2016), 65–75

[11] D. Amadori, P. Baiti, A. Corli, E. Dal Santo. *Global existence of solutions for a multi-phase flow: A bubble in a liquid tube and related cases*, Acta Math. Sci. Ser. B **35** (2015), 832–854

[12] D. Amadori, P. Baiti, A. Corli, E. Dal Santo. *Global weak solutions for a model of two-phase flow with a single interface*, J. Evol. Equ. **15** (2015), 699–726

[13] D. Amadori, P. Goatin, M.D. Rosini. *Existence results for Hughes' model for pedestrian flows*, J. Math. Anal. Appl. **420** (2014), 387–406

[14] D. Amadori, L. Gosse. *Transient L^1 error estimates for well-balanced schemes on non-resonant scalar balance laws*, J. Differential Equations **255** (2013), 469–502

[15] D. Amadori, G.M. Coclite. *A note on positive solutions for conservation law with singular source*, Proc. Amer. Math. Soc. **141** (2013), 1613–1625

[16] D. Amadori, M. Di Francesco. *The one-dimensional Hughes model for pedestrian flow: Riemann–type solutions*, Acta Math. Sci. Ser. B **32** (1) (2012), 259–280

[17] D. Amadori, W. Shen. *An Integro-Differential Conservation Law arising in a Model of Granular Flow*, J. Hyperbolic Differ. Equ. **9** (1) (2012), 1–27

[18] D. Amadori, W. Shen. *Front Tracking Approximations for Slow Erosion*, Discrete Contin. Dyn. Syst. **32** (5) (2012), 1481–1502

[19] D. Amadori, W. Shen. *The Slow Erosion Limit in a Model of Granular Flow*, Arch. Ration. Mech. Anal. **199** (2011), 1–31

[20] D. Amadori, A. Corli. *Global existence of BV solutions and relaxation limit for a model of multiphase reactive flow*, Nonlinear Analysis TMA, Ser. A: Theory and Methods **72** (2010), 2527–2541

[21] D. Amadori, W. Shen. *Global Existence of Large BV Solutions in a Model of Granular Flow*, Comm. Partial Differential Equations **34** (2009), 1003–1040

[22] D. Amadori, A. Corli. *On a model of multiphase flow*, SIAM J. Math. Anal. **40** (2008), 134–166

[23] D. Amadori, S. Ferrari, L. Formaggia. *Derivation and analysis of a fluid-dynamical model in thin and long elastic vessels*, Networks and Heterogeneous Media, **2** (2007), 99–125

[24] D. Amadori, D. Serre. *Asymptotic behavior of solutions to conservation laws with periodic forcing*, Journal of Hyperbolic Differential Equations, **3** (2006), 387–401

[25] D. Amadori. *On the homogenization of conservation laws with resonant oscillatory source*, Asymptotic Anal. **46** (2006), 53–79

[26] D. Amadori, L. Gosse, G. Guerra. *Godunov–type approximation for a general resonant conservation law with large data*, J. Differential Equations **198** (2004), 233–274

[27] D. Amadori, L. Gosse, G. Guerra. *Global BV entropy solutions and uniqueness for hyperbolic systems of balance laws*, Archive for Rational Mechanics and Analysis **162** (2002), 327–366

[28] D. Amadori, G. Guerra. *Uniqueness and continuous dependence for systems of balance laws with dissipation*, Nonlinear Analysis TMA, Ser. A: Theory and Methods **49** (2002), 987–1014

[29] D. Amadori, G. Guerra. *Global weak solutions and relaxation limit for a system of conservation laws*, Proceedings of the Royal Society of Edinburgh Sect. A **131** (2001), 1–26

[30] D. Amadori, G. Guerra. *Global weak solutions for systems of balance laws*, Applied Mathematical Letters **12** (1999), 123–127

[31] D. Amadori, P. Baiti, P.G. LeFloch, B. Piccoli. *Non-Classical Shocks and the Cauchy Problem for Nonconvex Conservation Laws*, J. Differential Equations **151** (1999), 345–372

[32] D. Amadori, R.M. Colombo. *Viscosity Solutions and Standard Riemann Semigroup for Conservation Laws with Boundary*, Rendiconti del Seminario Matematico dell'Università di Padova, **99** (1998), 219–245

[33] D. Amadori, R.M. Colombo. *Continuous Dependence for 2×2 Conservation Laws with Boundary*, J. Differential Equations **138** (1997), 229–266

[34] D. Amadori. *Initial-boundary value problems for systems of conservation laws*, NoDEA – Nonlinear Differential Equations and Applications **4** (1997), 1–42

[35] D. Amadori. *Unstable Blow-up Patterns*, Differential and Integral Equations **8** (1995), 1977–1996

[36] D. Amadori, C. Parenti. *A Class of Hyperbolic Operators with Double Characteristics*, Communications in Partial Differential Equations **19** (1994), 1185–1201

Monograph

[37] D. Amadori, L. Gosse. **Error Estimates for Well-Balanced Schemes on Simple Balance Laws. One-Dimensional Position-Dependent Models.** *SpringerBriefs in Mathematics*, pp.110, 2015 [link]

Contribution to books

[38] D. Amadori, B. Andreianov, M. Di Francesco, S. Fagioli, T. Girard, P. Goatin, P. Markowich, J.-F. Pietschmann, M.D. Rosini, G. Russo, G. Stivaletta and M.T. Wolfram. *The mathematical theory of Hughes' model: a survey of results*
In: Crowd Dynamics (volume 4), January 2024, Birkhäuser-Springer

[39] D. Amadori, S.-Y. Ha, J. Park. *Wave-front tracking analysis for the Kuramoto–Sakaguchi equation*,
In: Innovative Algorithms and Analysis, 1–24, Springer INdAM Ser., 16, Springer, Cham, 2017

[40] D. Amadori, W. Shen. *A Hyperbolic Model of Granular Flow*,
Contemporary Mathematics **526** (2010), Amer. Math. Soc., Providence, RI, 1–18

Articles in Refereed Conference Proceedings

[41] D. Amadori, C. Christoforou. *Weak solutions with bounded support to an Euler-type flocking model*, XVIII International Conference on Hyperbolic Problems: Theory, Numerics, Applications. (HYP2022), SEMA SIMAI Springer Series

[42] D. Amadori, E. Dal Santo, F. Aqel. *Decay in L^∞ for the damped semilinear wave equation on a bounded 1d domain*, Proc. HYP2018, Theory, Numerics and Applications of Hyperbolic Problems (2020), 231–238

[43] D. Amadori, J. Park. *Emergent dynamics for the kinetic Kuramoto equation.* In: Hyperbolic Problems: Theory, Numerics, Applications, HYP2016, Aachen

[44] D. Amadori, A. Corli. *Solutions for a hyperbolic model of multi-phase flow.* ESAIM Proc. **40** (2013), 1–15

[45] D. Amadori, R.M. Colombo, G. Guerra, W. Shen. *Slow Erosion Of Granular Flow: Continuous And Discontinuous Profiles.* In: F. Ancona, A. Bressan, P. Marcati, A. Marson (Eds.). Hyperbolic Problems: Theory, Numerics, Applications, HYP2012, Padova Part 2, 641–649

[46] D. Amadori, W. Shen. *A Nonlocal Conservation Law from a Model of Granular Flow*, In: T. Li and S. Jiang. Hyperbolic Problems - Theory, Numerics and Applications. HYP2010, Beijing,

vol. 1, p. 265–272

[47] D. Amadori, W. Shen. *Mathematical aspects of a model for granular flow*, In IMA Volumes in Mathematics and its Applications **153**, Nonlinear Conservation Laws and Applications, 169-180 (2011), Springer. Editors: A.Bressan, G-Q.Chen, M.Lewicka and D.Wang

[48] D. Amadori, A. Corli. *Global solutions for a hyperbolic model of multiphase flow*, Proceedings of Symposia in Applied Mathematics **67**, Part 1 (2009), 161–173

[49] D. Amadori, A. Corli. *A hyperbolic model of multi-phase flow*, *Proceedings HYP2006*, Springer (2008), 407–414

[50] D. Amadori. *Homogenization of conservation laws with oscillatory source and non-equilibrium data*, *Proceedings HYP2006*, Springer (2008), 299-306

Unpublished

[51] D. Amadori, A. Corli. *Glimm estimates for a model of multiphase flow*, 2012, `http://people.disim.univaq.it/~amadori/PDF/glest.pdf`

Invited talks at conferences

- Meeting on Nonlinear Evolution PDEs, Fluid Dynamics and Transport Equations, Erice (Italy), 25–31/05/2023
- Conservation Laws & Surroundings, University of Modena and Reggio Emilia, 08–10/05/2023
- Present Research Trends in Conservation Laws, Roma, 08–10/09/2021
- VIII Partial differential equations, optimal design and numerics, Benasque (Spain), August 18–25, 2019 (invited session)
- Contemporary Aspects of Analysis II, Cyprus, May 6–10, 2019
- WIDEI, *Interactive workshop on hyperbolic equations*, Ferrara, 10–12/09/2018
- CMC conference: *Nonlinear dynamics of many-body systems and related topics*, Seoul, 21–24/08/2017
- *Women and Research in Mathematics: the Contribution of SISSA*. Trieste, September 7–9, 2016
- *HYP2016*, Aachen, August 1–5, 2016
- *11th Meeting on Nonlinear Hyperbolic PDEs and Applications*, Trieste, June 13–17, 2016
- *INdAM Workshop on Innovative Algorithms and Analysis*, Rome 17–20 May 2016
- *Contemporary topics in conservation laws*, Besançon (Francia), 9–12/02/2015
- *REvISitiNg DEcadES of conseRvation laws*, Lyon (Francia), 5–7/11/2014
- *SIMAI 2014*, Taormina, 7–10/07/2014
- *Asymptotic-Preserving Methods for Kinetic Equations*, NCSU, Raleigh (US), 3–6/02/2014
- *Hyperbolic Techniques for Phase Dynamics*, Oberwolfach, 9–15/06/2013
- *AMIS2012*, Chambery, 19–22/06/2012
- *Conference in honor of Cesare Parenti*, Bologna, 3–5/02/2010
- *Trentennale Analisi Matematica*, SISSA, 24–28/11/2008

- *HYP2008 – 12^{th} International Conference on Hyperbolic Problems. Theory, Numerics, Applications*, University of Maryland, 9–13/6/2008
- *Joint Meeting Mathematics and Its Applications*, Torino, 3–7/07/2006
- *Fourth Meeting on Hyperbolic Conservation Laws: Recent Results and Research Perspectives*, SISSA, Trieste, 13–14/6/2005
- *Stiff Sources and Numerical Methods for Conservation Laws*, American Institute of Mathematics, Palo Alto (US), 4–8/04/2005.
- *SIAM Conference on Analysis of PDEs*, Houston, 6–8/12/2004
- *Hyperbolic Conservation Laws: recent results and research perspectives*, Bologna, 3–4/06/2003
- *Advances on Nonlinear PDEs*, L'Aquila, 5–8/06/2002
- *IPERRoma99 – VII Incontro Nazionale sui Problemi di Tipo Iperbolico*, Roma, 25–27/10/1999
- *Joint TMR Conference on Kinetic and Hyperbolic Problems*, S. Margherita Ligure (Genova), 12–16/04/1999

Contributed talks at conferences

- *HYP2022*, Malaga (Spain), 20–24/06/2022
- *HYP2018*, Penn State University (US), 25–29/06/2018
- *HYP2014, 15th International Conference on Hyperbolic Problems: Theory, Numerics and Applications*, Rio de Janeiro (Brasile), 28/07–1/08/2014
- *IperMiB2013, 15th Italian Meeting on Hyperbolic Equations*, Milano, 11–13/09/2013
- *IPerMe11, XIV Incontro Nazionale – Problemi di Tipo Iperbolico*, Messina, 16–18/02/2011
- *International Summer School on Mathematical Fluid Dynamics*, Levico Terme, 27 giugno – 2 luglio 2010
- International Conference on *Hyperbolic Problems: Theory, Numerics and Applications*, Beijing (China), 15–19/06/2010
- Summer program in Nonlinear Conservation Laws and Applications, IMA - University of Minnesota, 13–31/07/2009 (poster session)
- *Sixth Meeting on Hyperbolic Conservation Laws: Recent Results and Research Perspectives*, L'Aquila, 17–19/7/2008
- *IPERPD2006 - 12th Meeting on Hyperbolic Equations*, Padova, 13–15/09/2006
- *HYP2006 – Eleventh International Conference on Hyperbolic Problems. Theory, Numerics, Applications*, Lyon (Francia), 17–21/07/2006
- *Multiphase Fluid Flows and Multi-Dimensional Hyperbolic Problems*, Cambridge (UK), Newton Institute, 31/03–5/04/2003 (poster session)
- Summer program *Theoretical and numerical aspects of hyperbolic systems*, Heraklion (Creta), luglio 1998
- *Hyperbolic Systems of Conservation Laws: Theory and Applications*, Trieste, 13–15/05/1998 (poster session)
- *SIMAI - Società Italiana per la Matematica Applicata e Industriale*, Salice Terme (Pavia, Italy), May 1996
- Meeting *Equazioni Differenziali Ordinarie e Applicazioni*, Bressanone, May 1995
- *Workshop on Hyperbolic Conservation Laws and Numerical Analysis*, Crete, August 1995

– *Workshop on Parabolic Equations*, Cortona, September 1994

Invited seminars:

Università degli Studi della Campania "Luigi Vanvitelli" (Novembre 2022),

Université de Franche–Comté (March 2019 and March 2022),

University of Cyprus (March 2018), Università di Ferrara (February 2018), University of Pisa (April 2017),

GSSI-L'Aquila (working group, November 2016), Seoul National University (May 2016 and May 2015), University of Zagreb (May 2016 and May 2014), Penn State University (April 2016).

Previous seminars: Università di Bari, Roma "La Sapienza"; Centre for Advanced Study (Oslo), Stanford University, Université de Nice, Université du Sud Toulon-Var, Politecnico di Milano, Università di Ferrara, Milano, Bologna, L'Aquila, ENS Lyon, École Polytechnique (Paris), IAC-CNR (Roma), Max-Planck Institute (Leipzig)

Research visits

– Université de Franche–Comté, Besançon, 17–23/03/2019 and 21–28/03/2022
– University of Cyprus, March 19–27, 2018; two visits in January and February 2020
– Seoul National University, Korea, 05/22/2015–06/01/2015, 05/21/2016–06/01/2016
– Penn State University (US), 11-22 aprile 2016
– University of Zagreb (Croatia), April–May 2015
– UMPA, École Normale Supérieure de Lyon (France), 10/05–6/06/2009
– Centre for Advanced Study, Oslo, March 2009
– Penn State University (US), April 2007 and June 2008
– Stanford University (US), March 2008
– Université de Nice (France), September 2006
– Université du Sud Toulon-Var (France), June 2005
– Max-Planck Institute, Leipzig (Germany), July 2000
– UMPA, École Normale Supérieure de Lyon (France), January 1998 and February 2000

Conference Organization

– Co-organizer (with F.A. Chiarello) of a Mini-symposium with title *"PDEs and Applications"*, *SIMAI 2023*, Matera, 28/08–01/09/2023
– Member of the Scientific and organizing committee of the *International Conference on Partial Differential Equations and Applications in honor of the 70th birthday of Pierangelo Marcati*, Gran Sasso Science Institute, L'Aquila, Jun 19–23, 2023
– Member of the Organizing Committee of the Workshop *"The geometry of Banach spaces, random dynamical systems and differential equations"* in memory of Józef Myjak, L'Aquila, November 22–23 2019
– Member of the Organizing Committee of *"Macroscopic Modeling of Vehicular and Pedestrian Traffic"*, Reggio Emilia (Italy), February 14–15, 2019
– Member of the Scientific Committee of *HYP2014*, Rio de Janeiro, 2014

- Member of the Organizing Committee of the 10^{th} *meeting on Hyperbolic Conservation Laws: Recent results and Research perspectives*, L'Aquila, July 11–12, 2013
- Member of the Organizing Committee of HYP2012, Padova, June 25–29, 2012
- Member of the organizing team of the *Sixth Meeting on Hyperbolic Conservation Laws: Recent Results and Research Perspectives*, L'Aquila, 17–19/7/2008
- Co-organizer (with S. Bianchini) of a Mini-symposium with title *"Hyperbolic Conservation Laws"* at the Conference *Equadiff07*, Vienna, 5–11/8/2007
- Member of the local team of *A-HYKE-3 - 3^{rd} annual meeting of the HYKE network*, Rome, 13–15/4/2005
- Organizer of a Mini-symposium with title *"Topics on Hyperbolic Conservation Laws with Source Term"* at the *SIAM Conference on Analysis of PDEs*, Houston (US), 6–8/12/2004

Research projects

- GNAMPA Visiting professor 2023, prof. Alexander Keimer (Univ. Erlangen), 06-24/03/2023
- GNAMPA Project 2023, *"Equazioni iperboliche e applicazioni"*
  Role: member of the L'Aquila unit. P.I.: F.A. Chiarello
- Progetto di Ateneo 2020/21, *Mathematical Models For Social Innovations: Vehicular And Pedestrian Traffic, Opinion Formation and Seismology*
  Role: member of the project. P.I.: S. Fagioli
- GNAMPA Project 2020, *"Buona positura, regolarità e controllo per alcune equazioni d'evoluzione"*. Role: member of the L'Aquila unit. P.I.: L. Caravenna
- GNAMPA Project 2018, *"Equazioni iperboliche e applicazioni"*
  Role: **P.I.**
- GNAMPA Project 2015, *"Dissipative hyperbolic system of balance laws"*
  Role: **P.I.**
- GNAMPA Project 2005, *"Asymptotic Analysis for Nonlinear Hyperbolic Systems"*
  Role: **P.I.**
- PRIN 2020, PRIN 2015, PRIN 2012, PRIN 2009, PRIN 2007
  Role: member of the L'Aquila unit. Coordinator S. Bianchini
- PRIN 2005.
  Role: member of the L'Aquila unit. Coordinator P. Secchi
- PRIN 1999, PRIN 1997
  Role: member of the unit at the University of Milan. Coordinator G. Talenti
- Member of the European project RTN "HYKE– HYperbolic and Kinetic Equations", # HPRN-CT-2002-00282, 2002–2005
- Member of the European project TMR: Hyperbolic Systems of Conservation Laws, 1996–1998

Editorial activity

- Reviewing activities for Journals:

Abstract and Applied Analysis,
Acta Applicandae Mathematicae,
Applied Mathematics and Computation,
Archive for Rational Mechanics and Analysis,
Chinese Annals of Mathematics Ser. B,
Communications in Applied and Industrial Mathematics,
Communications in Mathematical Sciences,
Communications in Partial Differential Equations,
Computational and Applied Mathematics,
Discrete and Continuous Dynamical Systems,
Electronic Journal of Differential Equations,
ESAIM: Proceedings and Surveys,
IMA Journal of Applied Mathematics,
IMA Journal of Numerical Analysis,
Journal of Differential Equations,
Journal of Evolution Equations,
Journal of Functional Analysis,
Journal of Hyperbolic Differential Equations,
Journal of Mathematical Analysis and Applications,
Journal of Mathematical Physics,
Mathematical Biosciences & Engineering,
Mathematical Modelling and Analysis,
Mathematical Models and Methods in Applied Sciences,
Minimax Theory and its Applications,
Networks and Heterogeneous Media,
Nonlinear Analysis Series A: TMA,
Nonlinear Analysis Series B: RWA,
Nonlinear Differential Equations and Applications,
Proceedings of the Royal Society of Edinburgh A,
Revista Colombiana de Matematicas,
Shock Waves,
SIAM Journal of Applied Mathematics,
SIAM Journal on Mathematical Analysis,
SIAM Journal on Numerical Analysis,
Taiwanese J. Math.,
Transactions of the American Mathematical Society,
Zeitschrift für angewandte Mathematik und Physik (ZAMP)

– Member of the Editorial Board of the Journal **Abstract and Applied Analysis** from August 2012 to November 2019

Mentoring of Ph.D. students and post-doc

- Supervisor of Ph.D. students
  - Gianmarco Cipollone, Univ. L'Aquila, since November 2023.
  - Astrid Correa, November 2018–2022. Cosupervision together with Prof. Matteo Colangeli. PhD Thesis titled: *On a two-layers model of weakly coupled Kuramoto oscillators: Analysis and Dissipation theory.*

  Date of the defence: July 25, 2023.
  - Kwame Atta Gyamfi, January 2018–January 2022. Cosupervised in collaboration with Prof. Carlotta Donadello, Université de Franche–Comté. PhD Thesis titled: *Analysis of entropy solutions to conservation laws with discontinuous flux in space and time.*

  Date of the defence: March 1, 2022.
  - Fatima Aqel, November 2016–May 2020. PhD Thesis titled: *Decay in $W^{1,\infty}$ for the 1D semilinear damped wave equation on a bounded domain.*

  Date of the defence: September 4, 2020.
  Fatima is currently Assistant Professor at the An-Najah National University, Nablus [`link`].
  - Stefania Ferrari, University of Milan, a.y. 2002/03. Cosupervision together with Prof. Fausto Saleri. Ph.D. thesis titled: *A new two–dimensional Shallow Water model: physical, mathematical and numerical aspects*

- Supervisor of post-doctoral students:
  - Monika Twarogowska (2015/16)
  - Edda Dal Santo (October 2016–May 2018)

- Ph.D. Course 2018/19: *Wave equations on bounded domains*, 6h.

Review of Ph.D. thesis/Habilitation and/or member of the committee

- Univ. L'Aquila, "Ingegneria e Modellistica Fisico-Matematica XX ciclo", April 2008 (member)

- University of Trondheim (Norway), January 2009 (reviewer and member)
Candidate: Hilde Sande

- Universidad Nacional de Colombia (Bogotá, Colombia), October 2015 (reviewer and member)
Candidate: Juan Juajibioy

- University of Zagreb (Croatia), October 2016 (reviewer)
Candidate: Andrej Novak

- Inria Sophia Antipolis Méditerranée, France, September 2019 (member of the jury)
Candidate: Nicolas Laurent-Brouty

- Univ. L'Aquila, "Matematica e Modelli XXXIV ciclo", December 2021 (member)
Candidate: Alessandro Paolucci

- Rheinland–Pfälzischen Technischen Universität Kaiserslautern–Landau, May 2023 (reviewer)
Candidate: Boby Gunarso
Thesis title: Well Posedness of Hyperbolic Systems of Balance Laws of Temple Type on Networks

- University of Tours, France, Habilitation (HDR), December 2023 (member of the jury)
Candidate: Vincent Perrollaz

3. **Responsibilities**

– Member of the Doctorate Council in Mathematics and Models (Univ. L'Aquila) since 2009, `http://people.disim.univaq.it/~dottorato_mate_mode/`
Since 2020: Vice-coordinator of the doctorate program.

– Member of the "Teaching Committee" for Bachelor a Master Degree programs in Mathematics

– Member of the departmental Committee for Internationalization.
Responsible for the Erasmus+ agreements with:
University of Zagreb (Croatia), Technische Universität Berlin (Germany), Universidad de Granada (Spain), Universidad de Oviedo (Spain).

– Responsible for the Erasmus+ program for the Mathematical Engineering and Mathematical Modelling Master degrees.

– Member of Recruiting Committees for position of "Ricercatore" (Researcher, either permanent, temporary or tenure track):
University of Lecce (2001), Roma Tor Vergata (2007), Udine (2019), Padova (2020), L'Aquila (2021), L'Aquila (2022)

– Member of Recruiting Committees for professor position: University of Milan (2019)

– Member of the national committee for the Procedure for the award of the National Scientific Qualification ("abilitazione scientifica nazionale") as Associate or Full Professor, Area "Mathematical Analysis, Probability and Mathematical Statistics", July 2021–June 2023
`https://abilitazione.miur.it/public/index.php?lang=eng`

4. **Teaching Activities**

Courses, full list

(MD = Master Degree, BD = Bachelor Degree)

– since a.y. 2013/14 to 2023/24: *Mathematical models for collective behavior*
(lectures delivered in English), 6 credits, MD in Math., Math. Eng., Math. Modelling and *MathMods* (Erasmus Mundus programme)

– a.y. 2023/24: Mathematical Analysis II, Engineering School, L'Aquila

– a.y. 2022/23: Mathematical Analysis II, Engineering School, L'Aquila

– a.y. 2021/22: 3 credits of the course *Fundamentals of Partial Differential Equations and Numerical Methods*, MD in Computer and Systems Engineering – Erasmus Mundus Joint Master Degree E-PiCo

– a.y. 2020/21, 2021/22: Mathematical Analysis I, Engineering School, L'Aquila

- a.a. 2017/18, 2018/19, 2019/20: "Istituzioni di Matematiche", 9 cfu, BD in Chemistry and Materials Sciences
- a.y. 2016/17: "Istituzioni di Matematiche", 6 credits, BD in Chemistry and Materials Sciences
- a.y. 2015/16: Mathematical Analysis I (2 classes), BD in Information Engineering, Computer Science, Chemistry
- a.y. 2014/15: Mathematical Analysis II, BD in Information Engineering
- a.y. 2014/15: Mathematics (3 credits), Biological Sciences, Environmental Sc. and Technology
- a.y. 2012/13: Mathematical Analysis III (2), BD in Math. and Physics, 6 credits; Advanced Analysis I, MD in Math., 3 credits
- a.y. 2011/12: Istituzioni di Analisi Superiore II, BD in Mathematics, 3 credits
- a.y. 2010/11: Advanced Analysis I, MD in Math, 9 credits
- a.y. 2009/10: Mathematical Analysis I, BD in Computer Science, 6 credits
- a.y. 2008/09:
  Mathematical Analysis I, BD in Computer Science
  Advanced Analysis I, MD in Math., 3 credits
- a.y. 2007/08 and 2006/07:
  Mathematical Analysis I, Computer Science
  Partial Differential Equations (3 credits), MD in Mathematics
- a.y. 2005/06:
  Mathematical Analysis B, BD in Physics
  Mathematical Analysis II, BD in Computer Science
- a.y. 2004/05:
  Mathematical Analysis I, BD in Computer Science
  Introduction to conservation laws (part of Advanced Analysis)
- a.y. 2003/04:
  Precalculus, BD in Computer Science
  Calculus, BD in Computer Science
- a.y. 2002/03, **University of L'Aquila**:
  Ordinary differential equations, BD in Math. (exercises)
  Calculus, BD in Computer Science (exercises)
  Precalculus, BD in Computer Science
- a.y. 2001/02, **University of Milan**:
  "Istituzioni di Matematica", BD in Computer Science for New Media Communications
- a.y. 2000/01:
  Mathematical Analysis I (exercises), BD in Physics
  "Istituzioni di Analisi Superiore" (exercises), BD in Math.

Mathematics, BD in Biotechnologies

– a.y. 1999/2000:
Mathematical Analysis I (exercises), BD in Physics
"Istituzioni di Analisi Superiore" (exercises), BD in Math.

– a.y. 1998/99:
Mathematical Analysis II (exercises), BD in Physics
"Istituzioni di Analisi Superiore" (exercises), BD in Math.

– a.y. 1997/98:
Mathematical Analysis I (exercises), two classes, BD in Computer Science

– a.y. 1996/97:
Mathematical Analysis I (exercises), two classes, BD in Computer Science

5. Other institutional activities

- Member of the organizing committee for the following public events:
  – PinKamP 2020, June 22–July 3 2020, `http://www.pinkamp.disim.univaq.it/`
  – Street Science, L'Aquila (Researchers' Night event) `https://www.univaq.it/section.php?id=1841`, from 2018 to 2021.
  Finantial support by INdAM for the 2021 edition: [`link`].