

Curriculum vitae et studiorum

of *Marco Morandotti*
(last update October 9, 2017)

Personal data

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Languages spoken: Italian (native language), English (fluent), Portuguese (fluent), French (fair knowledge).

Positions

- **December 15, 2016 – Present**¹: Postdoc in Mathematics at Technische Universität München, Germany.
- **September 1, 2014 – December 14, 2016**²: Postdoc in Applied Mathematics at SISSA — International School for Advanced Studies, Trieste, Italy.
- **October 3, 2011 – August 31, 2014**³: ICTI Postdoctoral Research Associate in Applied Mathematics
 - *April 4, 2013 – August 31, 2014*: Departamento de Matemática, Instituto Superior Técnico, Lisbon, Portugal.
 - *October 3, 2011 – March 31, 2013*: Department of Mathematical Sciences, Carnegie Mellon University, Pittsburgh, PA, USA.

¹Support for this position is fully provided by the ERC Starting Grant [High-Dimensional Sparse Optimal Control](#).

²Support for this position is fully provided by the ERC Advanced Grant [QuaDynEvoPro](#).

³Support for this position is fully provided by the Fundação para a Ciência e a Tecnologia (Portuguese Foundation for Science and Technology) through the Carnegie Mellon Portugal Program under Grant FCT-UTA/CMU/MAT/0005/2009 *Thin Structures, Homogenization, and Multiphase Problems*.

Career of studies

- October 27, 2011 Ph.D. in Applied Mathematics, SISSA — International School for Advanced Studies, Trieste, Italy. Thesis title: *Self-propulsion in viscous fluids through shape deformation*; Advisors Prof. G. Dal Maso and Prof. A. DeSimone.
- September 22, 2011 MCA (Master in Complex Actions, SISSA) diploma.
- February 5, 2008 IUSS diploma. Thesis title: *A variational problem in thin film theory*; Advisor Prof. E. Vitali, co-advisor Prof. F. Brezzi.
- July 17, 2007 M.Sc. in Mathematics, University of Pavia, with mark 110/110 cum laude. Thesis title: *Some results on the regularity of the infinity laplacian equation*; Advisor Prof. U.P. Gianazza.
- July 15, 2005 B.Sc. in Mathematics, University of Pavia, with mark 110/110 cum laude. Thesis title: *Introduzione alle tassellazioni auto-affini e ai legami con le basi di ondine (Introduction to self-affine tessellations and to their relations with wavelet bases)*; Advisor Prof. M.P. Bernardi.
- Alumnus of IUSS — Institute for Advanced Study, Pavia, class B/1, 7th cycle.
- Alumnus of Collegio Ghislieri in Pavia from October 2002 to October 2007.
- July 2002, high school degree, Liceo Scientifico Statale “N. Copernico”, Pavia; mark 100/100 cum laude.

Students supervised

- Francesco Olivari - IUSS Master thesis. (defence expected for February 2018)

Visits to universities

- Università di Salerno, September 8–15, 2017.
- Università di Pavia, Italy, July 4–7, 2017.
- Carnegie Mellon University, Pittsburgh, PA, USA, May 20–June 8, 2013, January 13–31, July 11–26, 2014, July 25–August 11, 2015, May 1–4, 2017.
- Ohio University, Athens, OH, USA, March 27–April 10, 2015, April 21–27, 2017.
- University of Warwick, UK, February 20–24, 2017.
- Instituto Superior Técnico, Lisbon, Portugal, March 5–9, November 19–23, 2012, December 15–19, 2014, January 5–9, May 26–31, December 14–21, 2015, January 4–11, 2017.
- University of Kanazawa, Japan, October 24–28, 2016.
- ESI Vienna, Austria, May 30–June 5, June 13–19, July 11–17, 2016.
- University of Bristol, UK, March 14–17, 2016.
- Politecnico di Torino, Italy, March 7–9, 2016.
- University of Vienna, Austria, September 7–11, 2015, February 15–19, 2016.
- Universidade de Évora, Portugal, June 1–7, 2015.
- Eindhoven University of Technology, Eindhoven, The Netherlands, October 14–17, 2014.
- SISSA, Trieste, Italy, December 12–15, 2011, April 2–5, September, December 17–20, 2012.
- McGill University, Montréal, Canada, November 28–December 1, 2011.

Awards, grants, and prizes

- GNAMPA Project 2015 *Critical Phenomena in the Mechanics of Materials: a Variational Approach*, P.I.
- Winner of a study prize from Istituto Nazionale di Alta Matematica “F. Severi” (INdAM) in the year 2008.
- Winner of a PhD position (XXIII cycle) with scholarship at SISSA — International School for Advanced Studies of Trieste, 2007-2011.
- Scholarship from Istituto Nazionale di Alta Matematica “F. Severi” (INdAM) for students of Laurea Specialistica degree course (M.Sc.) for the years 2005-2007.
- Scholarship from Collegio Ghislieri for a stay in July and August 2005 at St. John’s College in Cambridge.
- Winner of the IUSS - Institute for Advanced Study, Pavia study prize for the years 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007.
- Scholarship from Istituto Nazionale di Alta Matematica “F. Severi” (INdAM) for undergraduate students for the year 2002-2003, maintained by merit for the following two years.

Memberships

AIMETA; EMS; GNAMPA (INdAM); MRS; SIAM; SIAG/MS; SIMAI; UMI.
OrcID: 0000-0003-3528-6152. ResearchID: J-7862-2017.

Research interests

My research interests lie in the broad field of Applied Mathematics. In particular, I am interested in using calculus of variations and PDE methods to study problems arising from material science, continuum mechanics, engineering, mathematical biology, and industrial applications.

Current research topics include: Dynamics of dislocations in solids; Mechanics of fractures; Pattern formation in Langmuir-Blodgett transfer; Geometrically constrained walls in 3D; Structured deformations; Lower semicontinuity, relaxation, and homogenisation of functionals with linear growth in the context of \mathcal{A} -quasiconvexity; Evolutionary mean field games.

Publications

22. G. Carita, J. Matias, M. Morandotti, and D. R. Owen: *Dimension reduction in the context of structured deformations*. [arXiv:1709.02869](#). *Submitted*.
21. I. Lucardesi, M. Morandotti, R. Scala, and D. Zucco: *Confinement of dislocations inside a crystal with a prescribed external strain*. Preprint SISSA 20/2016/MATE. [arXiv:1610.06852](#). *Submitted*.
20. M. Morandotti: *Structured deformations and applications*. PAMM (2017), *to appear*.
19. M. Morandotti: *Qualitative and quantitative properties of the dynamics of screw dislocations*. Proceedings of the XXIII Congresso AIMETA. [arXiv:1707.06176](#), *to appear*.
18. T. Hudson and M. Morandotti: *Properties of screw dislocation dynamics: time estimates on boundary and interior collisions*. SIAM J. Appl. Math., **77**(5) (2017), pp. 1678-1705.
17. M. Morandotti: *Boundary Behaviour and Confinement of Screw Dislocations*. MRS Advances **48**(2) (2017), pp. 2633-2638.
16. A. C. Barroso, J. Matias, M. Morandotti, and D. R. Owen: *Second-order structured deformations: relaxation, integral representation and applications*. Arch. Rational Mech. Anal., **225** (2017), pp. 1025-1072.
15. M. Morandotti: *Structured Deformations of Continua: Theory and Applications*. [arXiv:1702.02105](#). Proceedings of the conference CoMFoS16, *to appear*.
14. J. Matias, M. Morandotti, and E. Zappale: *Optimal Design of Fractured Media with Prescribed Macroscopic Strain*. Journal of Mathematical Analysis and Applications **449** (2017), pp. 1094-1132.
13. A. C. Barroso, J. Matias, M. Morandotti, and D. R. Owen: *Explicit Formulas for Relaxed Disarrangement Densities Arising from Structured Deformations*. Math. Mech. Complex Syst., **5**(2) (2017), pp. 163-189.
12. G. A. Bonaschi, P. van Meurs, and M. Morandotti: *Dynamics of screw dislocations: a generalised minimising-movements scheme approach*. Eur. J. Appl. Math., **28**(4), (2017), pp. 636-655.
11. T. Blass and M. Morandotti: *Renormalized Energy and Peach-Köhler Forces for Screw Dislocations with Antiplane Shear*. J. Convex Anal. **24**(2) (2017), pp. 547-570.
10. G. Dal Maso and M. Morandotti: *A model for the quasistatic growth of cracks with fractional dimension*. Nonlinear Analysis Series A: Theory, Methods & Applications **154** (2017), pp. 43-58.
9. J. Matias and M. Morandotti: *Homogenization problems in the calculus of variations: an overview*. São Paulo Journal of Mathematical Sciences **9**(2) (2015), pp. 162-180.
8. M. G. Persico, L. Lodola, F. E. Buroni, M. Morandotti, P. Pallavicini, C. Aprile: *^{99m}Tc - Human Serum Albumin nanocolloids: particle sizing and radioactivity distribution*. Journal of Labelled Compounds and Radiopharmaceuticals **58**(9) (2015), pp. 376-382.
7. J. Matias, M. Morandotti, and P. M. Santos: *Homogenization of functionals with linear growth in the context of \mathcal{A} -quasiconvexity*. Appl. Math. Optim. **72**(3) (2015), pp. 523-547.
6. T. Blass, I. Fonseca, G. Leoni, and M. Morandotti: *Dynamics for Systems of Screw Dislocations*. SIAM J. Appl. Math. **75** (2015), pp. 393-419.
5. G. Dal Maso, A. DeSimone, and M. Morandotti: *One-dimensional swimmers in viscous fluids: dynamics, controllability, and existence of optimal control*. ESAIM Control Optim. Calc. Var. **21** (2015), pp. 190-216.

4. R. Choksi, M. Morandotti, and M. Veneroni: *Global minimizers for axisymmetric multiphase membranes*. ESAIM Control Optim. Calc. Var. **19** (2013), pp. 1014-1029.
3. M. Morandotti: *Self-propelled micro-swimmers in a Brinkman fluid*. Journal of Biological Dynamics **6** Iss. sup1 (2012), pp. 88-103.
2. G. Bertolini, C. Rossi, D. Crespi, S. Finazzi, M. Morandotti, S. Rossi, M. Peta, M. Langer, and D. Poole: *Is A(H1N1) influenza pneumonia more severe than other community-acquired pneumonias? The result of the GiViTI survey on 155 Italian ICUs*. Intensive Care Medicine **37** (2011), pp. 1746-1755.
1. G. Dal Maso, A. DeSimone, and M. Morandotti: *An existence and uniqueness result for the dynamics of micro-swimmers*. SIAM J. Math. Anal. **43** (2011), pp. 1345-1368.

Invited seminars

- *The 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications* (SS131: *Mean Field Games and Applications* and SS144: *Analytic properties and numerical approximation of differential models arising in applications*), Taipei, July 5–9, 2018. (*forthcoming*)
- *Topics in the Calculus of Variations: Recent Advances and New Trends*, BIRS, Banff, Canada, May 20–25, 2018. (*forthcoming*)
- Groupe de Travail CalVa, Paris VII, France, September 25, 2017.
- Università del Sannio, Italy, September 14, 2017.
- AIMETA 2017, Salerno, Italy, September 4, 2017.
- *Analysis of Dislocation Models for Crystal Defects*, BIRS-CMO, Oaxaca, Mexico, June 25–30, 2017.
- Ohio University, Athens, OH, USA, April 25, 2017.
- University of Warwick, UK, February 22, 2017.
- *Miniworkshop on dislocations, plasticity, and fracture*, SISSA, Trieste, Italy, February 13–16, 2017.
- University of Kanazawa, Japan, October 28, 2016.
- International conference *CoMFoS16: Mathematical Analysis of Continuum Mechanics and Industrial Applications II*, Kyushu University, Fukuoka, Japan, October 22–24, 2016.
- Workshop *Variational and hamiltonian structures: models and methods*, ESI, Vienna, Austria, July 11–15, 2016.
- *The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications* (SS8: *New Trends in Calculus of Variations and Partial Differential Equations*), Orlando, July 1–5, 2016.
- *9th European Conference on Elliptic and Parabolic Problems*, Gaeta, Italy, May 23–27, 2016.
- University of Bristol, UK, March 17, 2016.
- *Variational Perspectives*, Politecnico di Torino, Italy, March 8, 2016.
- University of Vienna, Austria, September 10, 2015.
- *AMS-EMS-SPM Joint International Meeting*, Porto, Portugal, June 10–13, 2015.
- University of Évora, Portugal, June 3, 2015.
- Ohio University, Athens, OH, USA, March 2015.
- Workshop *Analytic approaches to scaling limits for random system*, HIM, Bonn, Germany, January 27, 2015.
- *CAMGSD Seminar*, Instituto Superior Técnico, Lisbon, Portugal, December 16, 2014.
- ICMS seminar on particle systems, Eindhoven University of Technology, The Netherlands, October 17, 2014.
- *CASA colloquium*, Eindhoven University of Technology, Eindhoven, The Netherlands, October 15, 2014.
- *The 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications* (SS85: *Transport Processes in Biology: Modelling and Analysis*), Madrid, July 7–11, 2014.
- University of Sussex, Brighton, UK, May 19, 2014.
- CNA Seminar, Carnegie Mellon University, Pittsburgh, PA, USA, January 28, 2014.
- *BMS Intensive Course on Evolution Equations and their Applications*, TU Berlin, Germany, November 28, 2013.
- Universidade Nova de Lisboa, Lisbon, Portugal, May 15, 2013.
- *The Eighth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory*, Athens, GA, USA, March 25–28, 2013.
- Instituto Superior Técnico, Lisbon, Portugal, November 21, 2012.
- MMC Seminar, Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA, USA, October 26, 2012.

- University of Modena and Reggio Emilia, Modena, Italy, September 27, 2012.
- University of Parma, Italy, September 25, 2012.
- *The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications* (SS76: *On PDEs from Biology*), Orlando, July 1–5, 2012.
- CNA Seminar, Carnegie Mellon University, Pittsburgh, PA, USA, April 17, 2012.
- Instituto Superior Técnico, Lisbon, Portugal, March 7, 2012.
- McGill University, Montréal, Canada, November 28, 2011.
- University of Padua, Italy, September 19, 2011.
- *The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications* (SS45: *Evolution Equations and Mathematical Biology*), Dresden, May 25–28, 2010.

Presentations

- *Nonconvexity, Nonlocality and Incompatibility: From Materials to Biology*, University of Pittsburgh, May 5–7, 2017.
- *2017 MRS Spring Meeting and Exhibit*, Phoenix, USA, April 17–21, 2017.
- *16th GAMM-Seminar on Microstructures*, TU Dortmund, Germany, January 20–21, 2017.
- *7th European Congress of Mathematics*, TU Berlin, Germany, July 18–22, 2016.
- *Convegno Scientifico GNAMPA 2016*, Montecatini Terme, Italy, June 20–23, 2016.
- *XXVI Convegno Nazionale di Calcolo delle Variazioni*, Levico Terme, Italy, January 19, 2016.
- *International Workshop Calculus of Variations and its Applications*, Universidade Nova de Lisboa, Portugal, December 17–19, 2015.
- *AMS-EMS-SPM Joint International Meeting*, Porto, Portugal, June 10–13, 2015.
- *Spring School on Microscopic descriptions and mean-field equations in physics and social sciences* (poster), University of Bath, UK, May 12–16, 2014.
- *Winter School Calculus of Variations in Physics and Materials Science* (poster), Würzburg, February 10–14, 2014.
- *2014 Joint Mathematics Meeting*, Baltimore, MD, USA, January 2014.
- *CMU CNA Working Group* December 4, 2012.
- *Evolution problems in damage, plasticity and fracture: mathematical models and numerical analysis*, Udine, Italy, September 19–21, 2012.
- *Heterostructured Nanocrystalline Materials* (poster), ICERM, Brown University, May 30–June 1, 2012.
- *Winter School Calculus of Variations in Physics and Materials Science* (poster), Würzburg, January 2012.
- *Incompressible Fluids, Turbulence and Mixing. In honor of Peter Constantin's 60th birthday*, CMU, Pittsburgh, October 2011.
- *Individual and Collective Fluid Mechanics of Swimming Microorganisms*, Glasgow, July 2010.
- *International Conference on Elliptic and Parabolic Equations* (poster), WIAS, Berlin, December 2009.
- *Workshop Multiscale Analysis of Self-Organization in Biology* (poster), BIRS, Banff, July 2009.

Teaching activity

At University of Trieste

- Istituzioni di Matematiche for the degree course in Architecture, 2016–2017.
- Istituzioni di Matematiche for the degree course in Architecture, 2015–2016.
- Recitations for the course Analytical Mechanics for the degree course in Mathematics, 2015–2016.
- Istituzioni di Matematiche for the degree course in Architecture, 2014–2015.
- Tutor for the course of Mathematics I for the degree course in Chemistry, 2009–2010.

At SISSA

- Reading course on Measure and Integration, 2015–2016.

At Instituto Superior Técnico

- Recitations for the course Complex Analysis and Differential Equations, Spring semester, 2014.

At University of Pavia

- TA for the course of Istituzioni di Matematiche for the degree course in Biological Sciences, 2006–2007.
- Introductory course in Mathematics for the first-year students in Mathematics and Physics, 2006–2007.
- Tutor for the course of Mathematics with Elements of Statistics for the degree courses in Pharmacy, 2006–2007.
- Introductory course in Mathematics for the first-year students in Mathematics and Physics, 2005–2006.
- Tutor for the course of Istituzioni di Matematiche for the degree course in Biological Sciences, 2004–2005.
- Introductory course in Mathematics for the first-year students in Natural Sciences and Geology, 2004–2005.

Participation to conferences, congresses, and schools (selected)

- *The 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications*, Taipei, Taiwan, July 5–9, 2018. (forthcoming)
- *Topics in the Calculus of Variations: Recent Advances and New Trends*, BIRS, Banff, Canada, May 20–25, 2018. (forthcoming)
- AIMETA 2017, Salerno, Italy, September 4–7, 2017.
- *Analysis of Dislocation Models for Crystal Defects*, CMO Oaxaca, Mexico, June 25–30, 2017.
- *Mean field games and related topics - 4*, Sapienza University of Rome, June 14–16, 2017.
- *Ninth Summer School in Analysis and Applied Mathematics*, Sapienza University of Rome, June 5–9, 2017.
- *Nonconvexity, Nonlocality and Incompatibility: From Materials to Biology*, University of Pittsburgh, USA, May 5–7, 2017.
- *Miniworkshop on dislocations, plasticity, and fracture*, SISSA, Trieste, Italy, February 13–16, 2017.
- *XXVII Convegno Nazionale di Calcolo delle Variazioni*, Levico Terme, Italy, February 6–10, 2016.
- International conference *CoMfOS16: Mathematical Analysis of Continuum Mechanics and Industrial Applications II*, Kyushu University, Fukuoka, Japan, October 22–24, 2017.
- *Lecce Conference in Calculus of Variations and Partial Differential Equations*, Lecce, Italy, October 4–7, 2016.
- *A Mathematical Tribute to Ennio De Giorgi*, CRM, Pisa, Italy, September 19–23, 2016.
- *Meeting on Applied Mathematics and Calculus of Variations*, Sapienza University of Rome, Italy, September 13–16, 2016.
- *7th European Congress of Mathematics*, TU Berlin, Germany, July 18–22, 2016.
- *Variational and hamiltonian structures: models and methods*, ESI Vienna, Austria, July 11–15, 2016.
- *The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications*, Orlando, FL, USA, July 1–5, 2016.
- *Convegno Scientifico GNAMPA 2016*, Montecatini Terme, Italy, June 20–23, 2016.
- *Entropy methods, dissipative systems, and applications*, ESI Vienna, Austria, June 13–17, 2016.
- *Advances in the Mathematical Analysis of Material Defects in Elastic Solids*, SISSA, Trieste, Italy, June 6–10, 2016.
- *9th European Conference on Elliptic and Parabolic Problems*, Gaeta, Italy, May 23–27, 2016.
- *XXVI Convegno Nazionale di Calcolo delle Variazioni*, Levico Terme, Italy, January 18–22, 2016.
- *Trends in Non-Linear Analysis 2015*, SISSA, Trieste, Italy, July 1–3, 2015.
- *Eighth Summer School in Analysis and Applied Mathematics*, Sapienza University of Rome, Italy, June 15–19, 2015.
- *AMS-EMS-SPM Joint International Meeting*, Porto, Portugal, June 10–13, 2015.
- Intensive Trimester *Variational Models for Plasticity and Dislocations*, SISSA, Trieste, Italy, February 23–May 15, 2015.
- *Gradient flows and entropy methods*, HIM, Bonn, Germany, February 17–20, 2015.
- *XXV Convegno Nazionale di Calcolo delle Variazioni*, Levico Terme, Italy, February 2–6, 2015.
- *Analytic approaches to scaling limits for random system*, HIM, Bonn, Germany, January 26–30, 2015.
- *Variational Modeling in Solid Mechanics*, Udine, Italy, September 22–24, 2014.
- *Atomistic and Multi-Scale Models of Materials*, Warwick, UK, September 15–18, 2014.
- *Trends in Non-Linear Analysis*, Instituto Superior Técnico, Lisbon, Portugal, July 31 – August 1, 2014.
- Research program at the *24th PCMI Summer Session: Mathematics and Materials*, Park City, UT, USA, July 13–18, 2014.
- *The 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications*, Madrid, Spain, July 7–11, 2014.
- Spring School *Microscopic descriptions and mean-field equations in physics and social sciences*, Bath, UK, May 12–16, 2014.
- Winter School *Calculus of Variations in Physics and Materials Science*, Würzburg, Germany, February 10–14, 2014.
- *BMS Intensive Course on Evolution Equations and their Applications*, TU Berlin, Berlin, Germany, November 27–29, 2013.
- *Evolution Problems for Material Defects: Dislocations, Plasticity, and Fracture*, SISSA, Trieste, Italy, September 30–October 4, 2013.
- *Variational Views in Mechanics and Materials*, Pavia, Italy, June 24–26, 2013.
- SIAM conference on *Mathematical Aspects of Material Science*, Philadelphia, PA, USA, June 9–12, 2013.

- 2013 CNA Summer School *Topics in Nonlinear PDEs and Calculus of Variations, and Applications in Materials Science*, Carnegie Mellon University, Pittsburgh, PA, USA, May 30–June 7, 2013.
- *Evolution problems in damage, plasticity and fracture: mathematical models and numerical analysis*, Udine, Italy, September 19–21, 2012.
- *The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications*, Orlando, FL, USA, July 1–5, 2012.
- NSF PIRE Summer School *New frontiers in multiscale analysis and computing for materials*, IMA, Minneapolis, MN, USA, June 25–29, 2012.
- *Heterostructured Nanocrystalline Materials*, ICERM, Brown University, Providence, RI, USA, May 30–June 1, 2012.
- Winter School *Calculus of Variations in Physics and Materials Science*, Würzburg, Germany, January 8–13, 2012.
- *SIAM Conference on Analysis of Partial Differential Equations*, San Diego, CA, USA, November 14–17, 2011.
- Workshop *Macroscopic Modeling of Materials with Fine Structure*, Carnegie Mellon University, Pittsburgh, PA, USA, May 26–28, 2011.
- *XXI Convegno Nazionale di Calcolo delle Variazioni*, Levico Terme, Italy, February 6–11, 2011.
- *Individual and Collective Fluid Mechanics of Swimming Microorganisms*, Glasgow, Scotland, July 6–8, 2010.
- *The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications*, Dresden, Germany, May 25–28, 2010.
- *XX Convegno Nazionale di Calcolo delle Variazioni*, Levico Terme, Italy, February 21–26, 2010.
- Workshop *Multiscale Analysis of Self-Organization in Biology*, BIRS, Banff, AB, Canada, July 12–17, 2009.
- *Fifth Summer School in Analysis and Applied Mathematics*, Sapienza, University of Rome, June 1–5, 2009.
- *XIX Convegno Nazionale di Calcolo delle Variazioni*, Levico Terme, Italy, February 8–13, 2009.
- C.I.M.E. Summer School *Nonlinear PDE's and Applications*, Cetraro, June 22–28, 2008.
- *Meeting on Applied Mathematics and Calculus of Variations*, University of Rome “La Sapienza”, June 8–11, 2008.
- CIM/UC Summer School *Topics in nonlinear PDEs*, Coimbra, July 22–27, 2007.

Organizing activity

- Co-organizer of SS75 *Mathematics and materials: models and applications* at the 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Taipei, Taiwan, July 5–9, 2018. (*forthcoming*)
- Co-organizer of the Mini-Symposium *Dislocations: recent results and perspectives* at the 7th European Congress of Mathematics, TU Berlin, July 18–22, 2016.
- Co-organizer of SS27 *Advances in the mathematical modeling of failure phenomena and interfaces in materials* at the 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL, USA, July 1–5, 2016.
- Co-organizer of the conference *Advances in the Mathematical Analysis of Material Defects in Elastic Solids*, SISSA, Trieste, Italy, June 6–10, 2016.
- Co-organizer of the CalcVar seminar cycle at SISSA, Trieste, Italy, Fall 2015–Spring 2016.
- Co-organizer of the workshop *Trends in Non-Linear Analysis 2015*, SISSA, Trieste, Italy, July 1–3, 2015.
- Co-organizer of the Special Session *Mathematical models for materials* at the AMS-EMS-SPM Joint International Meeting, Porto, Portugal, June 10–13, 2015.
- Co-organizer of the Intensive Trimester *Variational Models for Plasticity and Dislocations*, SISSA, Trieste, Italy, February 23–May 15, 2015.
- Co-organizer of the workshop *Trends in Non-Linear Analysis*, Instituto Superior Técnico, Lisbon, Portugal, July 31–August 1, 2014.
- Co-organizer of the CNA-PIRE Working Group: Spring 2012 *Variational methods for phase transitions and copolymers* at Carnegie Mellon University.
- Organizer of the conference *La matematica fra i modelli e la realtà* at Collegio Ghislieri, Pavia, May 14, 2007. Speaker: Alfio Quarteroni, Politecnico of Milan and Ecole Polytechnique Fédérale of Lausanne.
- Organizer of the conference *Matematica e Scienze sociali* at Collegio Ghislieri, Pavia, May 9, 2007. Speaker: Stefano Demichelis, University of Pavia.