

CURRICULUM VITAE ET STUDIORUM OF **MASSIMILIANO MORINI**

Born in Suzzara (Mantova), on February 23 1973
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EDUCATION

1997–2001 PhD in Mathematics (under the supervision of Gianni Dal Maso), International School of Advanced Studies (SISSA) of Trieste, defended on October 30, 2001.

1993–1997 Bachelor and Master in Mathematics, University of Parma, with the score 110/110 cum laude.

LANGUAGE SKILLS

Italian : Native
English : Fluent

CURRENT POSITION

2015– **University of Parma:** Full Professor from December 2015.

ACCADEMIC POSITIONS

2010–2015 University of Parma: Associate professor

2004–2010 International School of Advanced Studies (SISSA) of Trieste: Researcher (Ricercatore Universitario)

2001–2004 Carnegie Mellon University, Pittsburgh: Postdoctoral Associate at the Center of Nonlinear Analysis.

1997–2001 International School of Advanced Studies (SISSA) of Trieste: PhD student in Mathematical Analysis

FELLOWSHIPS, GRANTS AND AWARDS

Fall 2008 Fellowship granted by the Hausdorff Center of Bonn (Germany) to lead a research group within the Junior Trimester Program in Analysis.

May 2012 One-month visiting position at the level of Professor granted on a competitive basis by the Université de Paris 7.

June 2015 Fellowship granted on a competitive basis by the Institut Henri Poincaré (IHP) de Paris within the program “Research in Paris” for the period June 19th to July 10th 2015.

April 2023 Visiting grant (3000 Eu) granted on a competitive basis by the Université Paris Dauphine.

2010–2019 PI of 4 GNAMPA grants.

October 2023–present Local PI (Parma Research Unit) of the the project PRIN 2022 “ Geometric Evolution Problems and Shape Optimization” (60.000 Eu).

November 2023–present Local PI (Parma Research Unit) of the the project PRIN PNRR 2022 “ Magnetic skyrmions, skyrmionic bubbles and domain walls for spintronic applications” (85.000 Eu).

March 2024 One month visiting grant (5000 Eu) granted on a competitive basis by the University of Jyväskylä (Finland)

December 2025 Winner of the first edition of the *Outstanding Research Awards* of the University of Parma

RESEARCH SUPERVISION

In addition to several Master students, PhD supervisor of the following researchers :

2004–2007 : Filippo Cagnetti, now Associate Professor at the University of Parma (and previously Reader at the University of Sussex, UK) ;

2010–2013 : Marco Bonacini, now Associate professor at the University of Trento ;

2012–2015 : Riccardo Cristofori, now Assistant Professor at Radboud University (Netherlands) ;

2020–2023 : Anna Kubin, now Post-Doc at the Technical University of Wien ;

2021–2024 : Daniele De Gennaro, now Post-Doc at Università Bocconi (Milano).

EDITORIAL ACTIVITY

2023– Editor in Chief of the international journal *Nonlinear Differential Equations and Applications (NoDEA)*.

2024– Member of the Editorial Board of of the international journal *Nonlinear Analysis*.

INVITED LECTURES AT INTERNATIONAL SCHOOLS AND INSTITUTIONS

Sept. 2013 : Minicourse “An isoperimetric problem with long-range interaction”, within the ERC School on Geometric Functional Inequalities and Shape Optimization, Naples (Italy), September 9th-13th 2013 ;

July. 2014 : Minicourse “Local and global minimality results for an isoperimetric problem with long range interaction”,

within the ERC School on Free Discontinuity Problems. Centro De Giorgi, Pisa, July 7th -14th 2014;
Fall 2014 : Mini-course “On a nonlocal isoperimetric problem”, at NCTS, Hsinchu, Taiwan, October 27, 2014;
Aug. 2021: Course on “Geometric evolutions problems” within the 30th Summer School of the University of Jyväskylä;
2012– : PhD courses on advanced research topics at the SISSA of Trieste, on a yearly basis;
Apr. 2022 : SSM Scientific Colloquium, Scuola Meridionale Superiore, 7 aprile 2022.
July 2022 : Minicourse “Weak approaches to level set curvature flows”, Summer School in Analysis and PDE, Università degli Studi della Campania “L. Vanvitelli”, Caserta, July 4–8 2022;
Jan. 2023 : Minicourse on “Level set and variational methods for geometric flows” at the Matrix Event “Minimal surfaces and geometric flows”, held in Melbourne, January 2023.
Jan. 2023 : Minicourse on “Anisotropic and nonlocal mean curvature flows : a distributional approach” at the Winter School on Geometric Flows and Evolution Equations in Geometric Analysis, Rome, February 3–7 2025.
Jan. 2023 : Minicourse on “Level set and variational methods for geometric flows”, Warsaw Summer School on Evolutionary PDEs, July 13–18 2025.

INVITED RESEARCH STAYS AT INTERNATIONAL INSTITUTIONS

In all the institutions listed below I also gave an invited lecture on some of my research topics.

- Max Planck Institut of Leipzig (Germany), July 2002, invited by Prof. Stefan Mueller;
- École Polytechnique de Lausanne (Switzerland), June 2004, invited by Prof. B. Dacorogna;
- Carnegie Mellon University (USA), October 2005, invited by Prof. I. Fonseca and Prof. G. Leoni;
- Carnegie Mellon University, November/December 2006, invited by Prof. I. Fonseca and Prof. G. Leoni;
- University of Warwick (UK), May 2007, invited by Dr. V. Slastikov;
- Carnegie Mellon University, November/December 2007, invited by Prof. I. Fonseca and Prof. G. Leoni;
- University of Bristol (UK), January 8th–18th, 2008, invited by Dr. V. Slastikov;
- Carnegie Mellon University, February 19th–April 16th, 2008, invited by Prof. I. Fonseca and Prof. G. Leoni;
- Hausdorff Center of Bonn (Germany), September 1st–November 14th, 2008, within the HIM Junior Trimester Program in Analysis;
- University of Bristol, January 15th–31st, 2009, invited by Dr. V. Slastikov;
- Instituto Tecnico Superior of Lisbon (Portugal), June 21st–30th, 2009, invited by Dr. M. Baia;
- University of Bristol, August 3rd–14th, 2009, invited by Dr. V. Slastikov;
- Carnegie Mellon University, October 25th–December 6th, 2009, invited by Prof. I. Fonseca and Prof. G. Leoni;
- École Polytechnique de Paris (France), April 8th–23rd, 2010, invited by Prof. A. Chambolle;
- Carnegie Mellon University, February 2011, 2012, 2013, 2014, invited by Prof. I. Fonseca and Prof. G. Leoni;
- University of Bristol, March 19th–28th, 2012, invited by Dr. V. Slastikov;
- Université de Paris 7, May 28th–June 18th, 2012, through a fellowship granted by the university itself;
- Indiana University (Bloomington, USA), June 30th–July 7th, 2012, invited by Prof. P. Sternberg;
- University of Jyväskylä (Finland), May 2013, invited by Prof. P. Koskela;
- University of Bristol, July 8th–14th, 2013, invited by Prof. V. Slastikov;
- University of Texas at Austin (USA), May 2014, invited by Prof. L. Caffarelli and Prof. F. Maggi;
- National Tsing Hua University of Taiwan, October 2014, invited by Prof. C.N. Chen;
- Institut Henri Poincaré (IHP) de Paris, June/July 2015, stay funded by the program “Research in Paris”;
- University of Bath, October 2017, invited by Prof. L. Scardia;
- University of Sussex, April 2018, invited by Prof. F. Cagnetti;
- Heriot-Watt University of Edinburgh, February 2020, invited by Prof. L. Scardia;
- University of Jyväskylä (Finland), two weeks in March 2023, invited by Prof. Julin;
- Université de Paris Dauphine, April 2023, to work with Prof. A. Chambolle;
- University of Jyväskylä (Finland), March 2024, to work with Prof. Julin;
- Université de Paris Dauphine, two weeks in April 2024, invited by Prof. A. Chambolle.

MAIN INVITED SPEAKER AT THE FOLLOWING SELECTED INTERNATIONAL CONFERENCES

- Workshop “Recent Advances in Calculus of Variations and PDEs”, Pisa (Italy), March 2005;
- Workshop “Calculus of Variations in 2005”, Carnegie Mellon University, Pittsburgh (USA), October 17-19 2005;
- Summer School and Workshop on Calculus of Variations and Applications, Ponta Delgada (Azores), September 2006;
- Workshop on New Trends in Calculus of Variations and Mass Transport, Carnegie Mellon University, Pittsburgh, March 13-15 2008;
- Workshop on Variational Analysis, Erice (Italy), May 14-22 2012;
- Workshop on Geometric Inequalities in Calculus of Variations, Pisa, July 9-13 2012;
- ERC Workshop on Geometric Partial Differential Equations, Pisa, September 10-14 2012;
- Selected as a member and a speaker of the Italian delegation for the “5th Trilateral Meeting on Nonlinear

- Partial Differential Equations between Australia, Italy, and Taiwan”, Wollongong, Australia, December 2-7 2012 ;
- ERC Workshop on Variational Views in Mechanics and Materials, Pavia(Italy), June 24-26 2013 ;
 - Workshop on Partial Differential Equations and Applications, Pisa, February 21-22 2014 ;
 - Workshop ”Trends in Nonlinear Analysis”, held at the Instituto Superior Técnico of Lisbon, July 31-August 1 2014 ;
 - Workshop “Analytic and geometric methods in Calculus of Variations and Pde’s”, Roma (Italy), September 9-10 2014 ;
 - Workshop on Calculus of Variations and related topics, held at the National Tsing Hua University, Hsinchu, Taiwan, October 29-31 2014 ;
 - Conference on Calculus of Variations, PDE, and Geometric Measure Theory, University of Sussex, September 7-8 2015.
 - Workshop on Mathematical Models of Defects and Patterns, New York University’s Courant Institute of Mathematical Sciences, January 5-8 2016 ;
 - Workshop on New Challenges for the Calculus of Variations Stemming from Problems in the Materials Sciences and Image Processing, Montreal (CA), May 16-20 2016 ;
 - Lecce Conference in the Calculus of Variations and Partial Differential Equations, Lecce, October 4-7 2016 ;
 - Workshop on Topics in the Calculus of Variations : Recent Advances and New Trends, held at BIRS, Banff (CA), May 20–25, 2018 ;
 - Workshop “Calculus of Variations and Geometric Measure Theory at Sussex”, University of Sussex, Brighton (UK), July 2–4, 2018 ;
 - Workshop “Fifth Workshop on Thin structures”, Napoli, September 13-15 2018 ;
 - Workshop “Quantum trails and surroundings”, Politecnico di Torino, September 27-29 2018 ;
 - Selected as a member and speaker of the Italian delegation for the “7th Trilateral Meeting on Nonlinear Partial Differential Equations between Australia, Italy, and Taiwan”, Tainan, Taiwan, January 23–27 2019 ;
 - Workshop “Mathematical models for pattern formation”, Carnegie Mellon University, Pittsburgh (USA), March 8-10, 2019 ;
 - Workshop “New trends in variational models : from semiconductors to liquid crystals”, Fields Institute, Toronto (Canada), June 17-21 2019 ;
 - Workshop “Recent advances in the Calculus of Variations”, held at University of Münster, September 16-19, 2019 ;
 - Workshop “Modeling of Crystalline Interfaces and Thin Film Structures : A Joint Mathematics-Physics Symposium”, held at the Erwin Schrödinger Institute of Vienna, November 11-15, 2019 ;
 - Workshop “Variational methods and applications”, Centro De Giorgi, Pisa, September 6-10 2021 ;
 - XII Forum of Partial Differential Equations, 19.09.2021–25.09.2021, Bdlewo (online)
 - OneWord PDE online seminar, October 19, 2021 ;
 - Workshop “Free Boundary Problems and Related Evolution Equations”, Erwin Schrödinger Institute of Vienna, February 21-25 2022 ;
 - Workshop “Variational Challenges”, Erwin Schrödinger Institute of Vienna, June 20-24 2022 ;
 - Workshop “Isoperimetric Problems”, Pisa, June 20-24 2022 ;
 - Workshop “Complex Materials”, Hausdorff Center of Bonn, January 2023 ;
 - Misymposium ”New trends in the Calculus of Variations”, AMS-UMI meeting, Palermo, July 2024 ;
 - Workshop ”Mathematical Materials Science : Defects and Polycrystals”, Edinburgh, October 2024 ;
 - Workshop “Variational models in Materials Science-III”, Accademia Pontaniana, February 24–26 2025 ;
 - Workshop “Nonlocal variational problems and PDEs”, GSSI (L’Aquila), 31 March–4 April 2025 ;
 - Workshop “Three days in Calculus of Variations”, Vienna, June 25-27 2025 ;
 - Workshop “Frontiers in Calculus of Variations and Applied Analysis”, TUM (Munich), September 8–12 2025 ;
 - Workshop “Progress in modeling and analysis for nanomagnetism and related topics”, Pisa, October 14–17, 2025 ;
 - Workshop “When CalcVar meets Siena”, Siena, January 19–21 2026 ;
 - Workshop “International geometric analysis conference in Milan II”, June 8–12 2026.

ORGANIZATION

Co-organizer of the following international conferences/ mimisymposia/schools :

- Workshop on “Advances in Nonlinear Analysis”, Carnegie Mellon University, June 2003 ;
- Minisymposium “Contemporary Developments in Calculus of Variations and PDE”, within the SIAM Conference on PDE, Boston, July 2006 ;
- Minisymposium “Variational Methods in Materials Science”, within the SIAM conference on PDE, Miami, December 2009 ;
- Summer School : “Topics in Calculus of Variations and Applications”, at the University of Parma, October 1–4, 2012 ;
- “6th Trilateral Meeting on Nonlinear Partial Differential Equations between Australia, Italy, and Taiwan”, held in Parma on December 14–18 2015 ;

20 SELECTED PUBLICATIONS (in reverse chronological order)

20. N. FUSCO ; F. MAGGI ; M. MORINI ; M. NOVACK, *Rigidity and large volume residues in exterior isoperimetry for convex sets*. Adv. Math. **453** (2024), Paper No. 109833.
19. G. DE PHILIPPIS ; N. FUSCO ; M. MORINI, *Regularity of capillarity droplets with obstacle*. Trans. Amer. Math. Soc. **377** (2024), 5787–5835.
18. M. MORINI ; C.B. MURATOV ; M. NOVAGA ; V. V. SLASTIKOV, *Transverse domain walls in thin ferromagnetic strips*. Arch. Ration. Mech. Anal. **247** (2023), Paper No. 59.
17. V. JULIN ; M. MORINI ; M. PONSIGLIONE ; E. SPADARO, *The asymptotics of the area-preserving mean curvature and the Mullins-Sekerka flow in two dimensions*. Math. Ann. **387** (2023), 1969–1999.
16. N. FUSCO ; M. MORINI, *Total positive curvature and the equality case in the relative isoperimetric inequality outside convex domains*. Calc. Var. Partial Differential Equations **62** (2023), Paper No. 102.
15. M. MORINI ; M. PONSIGLIONE ; E. SPADARO, *Long time behavior of discrete volume preserving mean curvature flows*. J. Reine Angew. Math. **784** (2022), 27–51.
14. N. FUSCO ; V. JULIN ; M. MORINI, *The surface diffusion flow with elasticity in three dimensions*. Arch. Ration. Mech. Anal. **237** (2020), 1325–1382.
13. A. CHAMBOLLE ; M. MORINI ; M. NOVAGA ; M. PONSIGLIONE, *Existence and uniqueness for anisotropic and crystalline mean curvature flows*. J. Amer. Math. Soc. **32** (2019), 779–824.
12. E. ACERBI ; N. FUSCO ; M. MORINI ; V. JULIN, *Nonlinear stability results for the modified Mullins-Sekerka and the surface diffusion flow*. J. Differential Geom. **113** (2019), 1–53.
11. N. FUSCO ; V. JULIN ; M. MORINI, *The surface diffusion flow with elasticity in the plane*. Comm. Math. Phys. **362** (2018), 571–607.
10. A. CHAMBOLLE ; M. MORINI ; M. PONSIGLIONE, *Existence and uniqueness for a crystalline mean curvature flow*. Comm. Pure Appl. Math. **70** (2017), 1084–1114.
9. A. CHAMBOLLE ; M. MORINI ; M. PONSIGLIONE, *Nonlocal curvature flows*. Arch. Ration. Mech. Anal. **218** (2015), 1263–1329.
8. I. FONSECA ; N. FUSCO ; G. LEONI ; M. MORINI, *Motion of three-dimensional elastic films by anisotropic surface diffusion with curvature regularization*. Analysis & PDE **8** (2015), 373–423.
7. A. FIGALLI ; N. FUSCO ; F. MAGGI ; V. MILLOT ; M. MORINI, *Isoperimetry and stability of balls with respect to nonlocal energies*. Comm. Math. Phys. **336** (2015), 441–507.
6. E. ACERBI ; N. FUSCO ; M. MORINI, *Minimality via second variation for a nonlocal isoperimetric problem*. Comm. Math. Phys. **322** (2013), 515–557.
5. I. FONSECA ; N. FUSCO ; G. LEONI ; M. MORINI, *Motion of Elastic Thin Films by Anisotropic Surface Diffusion with Curvature Regularization*. Arch. Ration. Mech. Anal. **205** (2012), 425–466.
4. N. FUSCO ; M. MORINI, *Equilibrium configurations of epitaxially strained elastic films : second order minimality conditions and qualitative properties of solutions*. Arch. Ration. Mech. Anal. **203** (2012), 247–327.
3. I. FONSECA ; N. FUSCO ; G. LEONI ; M. MORINI, *Equilibrium configurations of epitaxially strained crystalline films : existence and regularity results*. Arch. Ration. Mech. Anal. **186** (2007), 477–537.
2. H. KOCH ; G. LEONI ; M. MORINI, *On optimal regularity of free boundary problems and a conjecture of De Giorgi*. Comm. Pure Appl. Math. **58** (2005), 1051–1076.
1. M. G. MORA ; M. MORINI, *Local calibrations for minimizers of the Mumford-Shah functional with a regular discontinuity set*. Ann. Inst. H. Poincaré Anal. Non Linéaire **18** (2001), 403–436.