

DAVIDE RICCOBELLI

<https://people.sissa.it/~driccobe>

POSITIONS

Tenure Track Assistant Professor in Mechanics of Solids and Structures <i>SISSA – mathLab, Area di Matematica</i>	Mar. 2025 – Today
Fixed Term Researcher in Mathematical Physics <i>Politecnico di Milano – MOX, Dipartimento di Matematica</i>	Jan. 2021 – Feb. 2025
Post-doc <i>SISSA – mathlab, Area di Matematica</i>	Nov. 2018 – Jan. 2021

VISITING PERIODS

Delft University of Technology <i>Department of Aerospace Engineering</i> <ul style="list-style-type: none">• Host: B. Giovanardi	May 2024 – July 2024 and Dec. 2024 (2 weeks)
University of Trento <i>Department of Civil, Environmental, and Mechanical Engineering</i> <ul style="list-style-type: none">• Host: L. Deseri	Mar. 2024 (1 week)
Sorbonne Université and ESPCI <i>Institut d'Alembert and Laboratoire de Physique et Mécanique des Milieux Hétérogènes</i> <ul style="list-style-type: none">• Hosts: C. Maurini, L. Truskinovsky	Feb. 2022 (1 week)
University of Oxford <i>Mathematical Institute</i> <ul style="list-style-type: none">• Host: D. Vella	July 2018 (3 weeks)
École Supérieure de Physique et de Chimie Industrielles (ESPCI) <i>Laboratoire de Physique et Mécanique des Milieux Hétérogènes</i> <ul style="list-style-type: none">• Host: L. Truskinovsky	Apr. 2017 – Oct. 2017
Sorbonne Université <i>Institut Jean Le Rond d'Alembert</i> <ul style="list-style-type: none">• Host: C. Maurini	Sep. 2017 – Oct. 2017

EDUCATION

Ph.D. in Mathematical Models and Methods in Engineering <i>Politecnico di Milano</i> <ul style="list-style-type: none">• Title of the thesis: <i>Mathematical modelling of soft and active matter</i>• Date of the thesis defence: 8th Feb. 2019• Advisor: P. Ciarletta	Nov. 2015 – Oct. 2018
Laurea Magistrale (M.Sc.) in Mathematics <i>Università Cattolica del Sacro Cuore</i>	Sep. 2013 – July 2015 <i>110/110 summa cum laude</i>
Laurea (B.Sc.) in Mathematics <i>Università Cattolica del Sacro Cuore</i>	Sep. 2011 – Sep. 2013 <i>110/110 summa cum laude</i>

QUALIFICATIONS

- Italian national scientific qualification as associate professor (professore di seconda fascia) for the disciplinary fields
 - MAT/07 - Mathematical Physics (valid until 3/10/2033).
 - ICAR/08 - Mechanics of Solids and Structures (valid until 27/09/2033).
- French qualification for the position of Maître de conférence
 - Section 26 - *Mathématiques appliquées et applications des mathématiques* (Applied mathematics).
 - Section 60 - *Mécanique, génie mécanique, génie civil* (Mechanics, mechanical engineering, civil engineering).

Journal articles

1. F. Magni and D. Riccobelli. Elastic plateau-rayleigh instability in soft cylinders: Surface elasticity and periodic beading. *Journal of the Mechanics and Physics of Solids*, 203:106258, 2025
2. V. Pederzoli, M. Corti, D. Riccobelli, and P. F. Antonietti. A coupled mathematical and numerical model for protein spreading and tissue atrophy applied to alzheimer's disease. *Computer Methods in Applied Mechanics and Engineering*, 444:118118, 2025
3. D. Cerrone, D. Riccobelli, S. Gazzoni, P. Vitullo, F. Ballarin, J. Falco, F. Acerbi, A. Manzoni, P. Zunino, and P. Ciarletta. Patient-specific prediction of glioblastoma growth via reduced order modeling and neural networks. *Mathematical Biosciences*, 387:109468, 2025
4. D. Riccobelli. Surface tension-driven boundary growth in tumour spheroids. *Interface Focus*, 15(2):20240035, 2025
5. M. Magri and D. Riccobelli. Modelling of initially stressed solids: structure of the energy density in the incompressible limit. *SIAM Journal on Applied Mathematics*, 84(6):2342–2364, 2024
6. D. Riccobelli, P. Ciarletta, G. Vitale, C. Maurini, and L. Truskinovsky. Elastic instability behind brittle fracture. *Physical Review Letters*, 132:248202, 2024
7. N. A. Barnafi, F. Regazzoni, and D. Riccobelli. Reconstructing relaxed configurations in elastic bodies: Mathematical formulation and numerical methods for cardiac modeling. *Computer Methods in Applied Mechanics and Engineering*, 423:116845, 2024
8. D. Riccobelli, H. H. Al-Terke, P. Laaksonen, P. Metrangolo, A. Paananen, R. H. A. Ras, P. Ciarletta, and D. Vella. Flattened and wrinkled encapsulated droplets: Shape-morphing induced by gravity and evaporation. *Physical Review Letters*, 130(21):218202, 2023
9. Y. Su, D. Riccobelli, Y. Chen, W. Chen, and P. Ciarletta. Tunable morphing of electroactive dielectric-elastomer balloons. *Proceedings of the Royal Society A*, 479(2276):20230358, 2023
10. P. Ciarletta, G. Pozzi, and D. Riccobelli. The Föppl–von Kármán equations of elastic plates with initial stress. *Royal Society Open Science*, 9(5):220421, 2022
11. D. Andrini, V. Balbi, G. Bevilacqua, G. Lucci, G. Pozzi, and D. Riccobelli. Mathematical modelling of axonal cortex contractility. *Brain Multiphysics*, 3:100060, 2022
12. D. Riccobelli. Active elasticity drives the formation of periodic beading in damaged axons. *Physical Review E*, 104(2):024417, 2021
13. D. Riccobelli, G. Noselli, and A. DeSimone. Rods coiling about a rigid constraint: Helices and perversions. *Proceedings of the Royal Society A*, 477(2246):20200817, 2021
14. D. Riccobelli and G. Bevilacqua. Surface tension controls the onset of gyrification in brain organoids. *Journal of the Mechanics and Physics of Solids*, 134:103745, 2020
15. D. Riccobelli, G. Noselli, M. Arroyo, and A. DeSimone. Mechanics of axisymmetric sheets of interlocking and slidable rods. *Journal of the Mechanics and Physics of Solids*, 141:103969, 2020
16. D. Riccobelli and D. Ambrosi. Activation of a muscle as a mapping of stress–strain curves. *Extreme Mechanics Letters*, 28:37–42, 2019
17. D. Riccobelli, A. Agosti, and P. Ciarletta. On the existence of elastic minimizers for initially stressed materials. *Philosophical Transactions of the Royal Society A*, 377(2144):20180074, 2019
18. G. Giamtesio, A. Musesti, and D. Riccobelli. A comparison between active strain and active stress in transversely isotropic hyperelastic materials. *Journal of Elasticity*, 137(1):63–82, 2019
19. D. Riccobelli and P. Ciarletta. Shape transitions in a soft incompressible sphere with residual stresses. *Mathematics and Mechanics of Solids*, 23(12):1507–1524, 2018
20. D. Riccobelli and P. Ciarletta. Morpho-elastic model of the tortuous tumour vessels. *International Journal of Non-Linear Mechanics*, 107:1–9, 2018
21. D. Riccobelli and P. Ciarletta. Rayleigh–Taylor instability in soft elastic layers. *Philosophical Transactions of the Royal Society A*, 375(2093):20160421, 2017
22. D. Ambrosi, S. Pezzuto, D. Riccobelli, T. Stylianopoulos, and P. Ciarletta. Solid tumors are poroelastic solids with a chemo-mechanical feedback on growth. *Journal of Elasticity*, 129(1-2):107–124, 2017

Conference proceedings

23. D. Riccobelli. Buckling behind brittle fracture in soft solids. In P. Diehl, R. Lipton, A. Pandolfi, and T. Wick, editors, *Fracture as an Emergent Phenomenon*, volume 2024, 1 of *Oberwolfach Workshop Report*, pages 22–23, Oberwolfach (GE), 2024. Mathematisches Forschungsinstitut Oberwolfach

Ph.D. Thesis

24. D. Riccobelli. *Mathematical modelling of soft and active matter*. PhD thesis, Politecnico di Milano, 2019

Preprints

25. B. Wu, L. Kong, W. Chen, D. Riccobelli, and M. Destradé. Electro-mechanical wrinkling of soft dielectric films bonded to hyperelastic substrates. *Submitted*, 2025

RESEARCH GRANTS (PI OR LOCAL COORDINATOR)

INdAM Starting Grant

- Title of the project: *MATH-FRAC: MATHematical modelling of FRACTure in nonlinear elastic materials.*
- Role: PI
- Amount: 30 k€

IDEA League Fellowship

- Title of the project: *Mathematical and computational modelling of fracture propagation in soft matter.*
- Role: PI
- Amount: 15 k€

PRIN 2022

- Title of the project: *Mathematical models for viscoelastic biological matter.*
- Role: local coordinator
- PI: G. G. Giusteri
- Amount: 187 k€

INdAM – GNFM project 2021

- Title of the project: *Transizioni di forma nella materia biologica e attiva* (Shape transitions in biological and active matter).
- Role: PI
- Amount: 4 k€

PARTICIPATION TO RESEARCH PROJECTS

INdAM – GNFM project 2023

- Title of the project: *Rimodellamento in materiali anisotropi e attivi* (Remodelling in anisotropic and active materials).
- Role: member
- PI: G. Lucci
- Amount: 2.5 k€

CNRS project

- Title of the project: *Modelling cell and tissue biomechanics (MOCETIBI).*
- Role: member
- PI: L. Almeida
- Amount: 40 k€

PRIN 2020

- Title of the project: *Mathematics for Industry 4.0.*
- Role: member
- PI: P. Ciarletta
- Amount: 480 k€

Regione Lombardia – Call Hub Ricerca e Innovazione

- Title of the project: *NEWMED project: Materials and methods for personalized and precision medicine.*
- Role: member
- PI: D. Polli
- Amount: 3.3 M€

ERC Advanced Grant

- Title of the project: *MicroMotility – Multiscale modeling and simulation of biological and artificial locomotion at the micron scale.*
- Role: member
- PI: A. De Simone
- Amount: 1.3 M€

PRIN 2017

- Title of the project: *Mathematics of active materials: from mechanobiology to smart device.*
- Role: member
- PI: L. Preziosi
- Amount: 420 k€

INdAM – GNFM project 2017

- Title of the project: *Evoluzione e Controllo della Forma nei Materiali Attivi* (Shape control in active material).
- Role: member
- PI: A. Lucantonio
- Amount: 2.5 k€

INdAM – GNFM project 2016

- Title of the project: *Fenomeni di frattura e instabilità nei Materiali Soffici Attivi* (Fracture and instability phenomena in soft active materials).
- Role: member
- PI: G. Noselli
- Amount: 5 k€

PRIZES, AWARDS, TRAVEL GRANTS

1. *AIMETA Junior Prize 2024* in General Mechanics, awarded by the Associazione Italiana di Meccanica Teorica e Applicata (AIMETA) for outstanding contributions in the field of Theoretical and Applied Mechanics.
2. *Research Highlights* on the paper “D. Riccobelli, H. H. Al-Terke, P. Laaksonen, P. Metrangolo, A. Paananen, R. H. A. Ras, P. Ciarletta, and D. Vella. Flattened and wrinkled encapsulated droplets: Shape-morphing induced by gravity and evaporation. *Physical Review Letters*, 130(21):218202, 2023” have been published on *Nature Reviews Physics* and *Physics*:
 - Z. Budrikis. Crumpling and wrinkling droplets. *Nature Reviews Physics*, 5(7):374-374, 2023
 - R. Berkowitz. Gravity Alters the Shape of an Evaporating Droplet. *Physics*, 16:s69, 2023.
3. The paper “D. Riccobelli, H. H. Al-Terke, P. Laaksonen, P. Metrangolo, A. Paananen, R. H. A. Ras, P. Ciarletta, and D. Vella. Flattened and wrinkled encapsulated droplets: Shape-morphing induced by gravity and evaporation. *Physical Review Letters*, 130(21):218202, 2023” has been selected as *Editors’ Suggestion* by the editorial board of *Physical Review Letters*.
4. The paper “D. Riccobelli. Active elasticity drives the formation of periodic beading in damaged axons. *Physical Review E*, 104(2):024417, 2021” has been selected as *Editors’ Suggestion* by the editorial board of *Physical Review E*.
5. Winner of the *GADeS award 2023* for the best Ph.D. thesis in the fields of dynamics and stability defended the thesis in the period 2018-2023. The prize is awarded by the GADeS group of the Italian Association of Theoretical and Applied Mechanics (AIMETA).
6. Winner of a travel grant for a visiting period to the Universidad de Chile, Center of Mathematical Modeling (1 month, Feb. 2025) awarded by the National Institute of Higher Mathematics.
7. Travel grant to participate to the *IUTAM Symposium on Capillarity and Elastocapillarity in Biology* (2024).
8. *Young Scientist Support Grant*, to participate to the *International Congress on Theoretical and Applied Mechanics 2024* awarded by *ICTAM*.
9. *Oberwolfach Leibniz Graduate Students*, travel grant to participate to a workshop at the Mathematisches Forschungsinstitut Oberwolfach (2018).
10. Travel grants to participate to the *INdAM Summer Schools on Mathematical Physics* (2015, 2016, 2018, 2020).

PRESENTATIONS

Invited presentations at international conferences and workshops

1. 26 Aug. 2024: *Elastic precursors of brittle fracture in soft solids*, International Conference of Theoretical and Applied Mechanics, Daegu.
2. 4 June 2024: *Mathematical modeling of axonal morphoelasticity: Cytoskeletal disruption and active elasticity in neurological disorders*, 9th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Lisbon.
3. 8 Jan. 2024: *Buckling behind brittle fracture in soft solids*, workshop “Fracture as an Emergent Phenomenon”, Mathematisches Forschungsinstitut Oberwolfach.
4. 20 June 2023: *Mathematical and numerical modeling of axonal beading*, ECCOMAS Young Investigators Conference, University of Porto.
5. 4 Apr. 2023: *Mechanotransduction in axons: Remodelling of the actin cortex*, British Applied Mathematics Colloquium, Bristol.
6. 12 Oct. 2022: *Nucleation of cracks as an elastic instability*, workshop “Modelling Cell and Tissue Biomechanics”, Laboratoire Jacques-Louis Lions, Sorbonne Université, Paris.
7. 4 July 2022: *From coronavirus infections to Alzheimer’s disease: Buckling of damaged axons*, 11th European Solid Mechanics Conference, University of Galway.
8. 7 Apr. 2021: *Role of tissue surface tension in brain organoid morphogenesis*, British Applied Mathematics Colloquium, Glasgow.
9. 26 Feb. 2018: *On the modeling of muscle contraction*, workshop “The Mathematics of Mechanobiology and Cell Signaling”, Mathematisches Forschungsinstitut Oberwolfach.

Invited presentations at national conferences and workshops

1. 23 Sep. 2025: *Elastocapillarity-driven surface growth in tumor spheroids*, INdAM Meeting “Mathematical Models and Methods for Hierarchical Systems in Mechanics”, Cortona.

2. 2 Sep. 2025: *Elastocapillarity-driven surface accretion in tumor spheroids*, Congress of the Italian Society of Applied and Industrial Mathematics (SIMAI), SISSA, Trieste.
3. 21 Feb. 2025: *Elastocapillarity of tumor growth*, Workshop “Mechanics of soft heterogeneous, and biological materials: state of the art and perspectives of the italian scientific community 2”, Università di Modena e Reggio Emilia.
4. 5 Sep. 2024: *Shape morphing of self-encapsulating droplets*, XXIV AIMETA Conference, University of Naples Federico II.
5. 5 Sep. 2024: *AIMETA Prize talk: Nonlinear mechanics of soft matter*, XXIV AIMETA Conference, University of Naples Federico II.
6. 15 Mar. 2024: *The shape of the heart*, workshop “Heart beats in continuum mechanics”, Politecnico di Torino.
7. 11 Sep. 2023: *Mathematical modelling of soft and active matter: GADeS award 2023*, GADeS – AIMETA Meeting, University of L'Aquila.
8. 11 May 2023: *Active elasticity in axons*, workshop “Applications of Linear and nonlinear Elasticity”, Catholic University of Sacred Heart, Brescia.
9. 30 Sep. 2021: *Mathematical modeling of axonal beading: From coronavirus infections to Alzheimer's disease*, workshop “Recent Advances in Mechanics and Mathematics of Materials”, Università la Sapienza, Rome.
10. 23 Sep. 2021: *Shape transitions in damaged axons*, INdAM Meeting: “Active Materials: from Mechanobiology to Smart Devices”, Cortona.
11. 17 June 2020: *Mechanics of axisymmetric sheets of interlocking and slidable rods*, Giornate Signorini, Università degli Studi di Perugia.
12. 17 Sep. 2019: *Spatially constrained growth triggers tumour vessel tortuosity*, XXIV AIMETA Conference, Università la Sapienza, Rome.
13. 3 Sep. 2019: *Influence of mechanical stress on solid tumor growth*, workshop “The Mechanics of Cell Aggregates: Experiments and Models”, Politecnico di Torino.
14. 7 June 2019: *Role of tissue surface tension in the morphogenesis of brain organoids*, workshop “Maths from the Body II”, organized by the Catholic University of Sacred Heart, Venice.
15. 31 Aug. 2017: *Chemo-mechanical feedback in solid tumor growth*, INdAM Meeting: “Mathematical Physics of Living Systems”, Cortona.

Invited seminars

1. 19 Mar. 2024: *Fracture nucleation as an elastic instability in soft solids*, seminar at the Department of Civil, Environmental, and Mechanical Engineering of the University of Trento.
2. 24 Oct. 2023: *Neurological diseases and brain mechanics: A mathematical perspective*, seminar at International School for Advanced Studies (SISSA), Trieste.
3. 17 May 2023: *Mathematical modelling of axon mechanics*, seminar in Mathematical Physics, Università degli Studi di Padova.
4. 2 Dec. 2021: *Mechanical instabilities in slender structures*, Industrial and Applied Mathematics Seminar, University of Oxford.
5. 14 May 2020: *Morphoelasticity of solid tumours*, webinar organized by the Univeristy of Glasgow.
6. 28 Jan. 2020: *Morphogenesis of sulci in brain organoids*, seminar at the Institut Jean Le Rond d'Alembert, Sorbonne Université, Paris.
7. 23 Oct. 2017: *Rayleigh-Taylor instability in elastic bilayers*, seminar at the Institut Jean Le Rond d'Alembert, Sorbonne Université.

Other presentations

1. 8 Nov. 2024: *Mathematics and mechanics of tumor growth*, Workshop “Mathematics for our Health”, Politecnico di Milano.
2. 22 Aug. 2024: *Role of tissue surface tension and elasticity in brain organoid morphogenesis (poster)*, IUTAM Symposium on Capillarity and Elastocapillarity in Biology, Seoul National University.
3. 9 July 2024: *Metamaterial structures inspired by microorganism motility*, seminar at the Faculty of Science, University of Amsterdam.
4. 4 July 2024: *The shape of the heart*, seminar at the Faculty of Mechanical Engineering, TU Delft.
5. 18 June 2024: *Fracture nucleation in soft matter as an elastic instability*, seminar at the Lorentz Institute, Leiden University.
6. 18 Jan. 2024: *Mathematical modelling of brain tumour growth: model order reduction and patient-specific parameter estimation*, workshop “Mathematics for Artificial Intelligence and Machine Learning”, Università Bocconi, Milano.
7. 28 Aug. 2023: *Mathematical modelling of brain tumour growth: reduced order modelling and parameter estimation*, Congress of the Italian Society of Applied and Industrial Mathematics (SIMAI), University of Basilicata.
8. 6 June 2023: *Tunable buckling of dielectric-elastomer spherical shells*, XXII International Conference on Waves and Stability in Continuous Media (WASCOM), Bari.
9. 17 June 2022: *Mathematical modelling of initially stressed materials*, XXIII Symposium on Trends in Applications of Mathematics to Mechanics, Catholic University of Sacred Heart, Brescia.

10. 2 Sep. 2021: *From coronavirus infections to Alzheimer's disease: Pearling of damaged axons*, Congress of the Italian Society of Applied and Industrial Mathematics (SIMAI), University of Parma.
11. 1 Sep. 2020: *Innovative structures inspired by microorganism motility*, XLV Summer School on Mathematical Physics (GNFM – INdAM), Ravello.
12. 13 Sep. 2018: *On the mathematical modelling of muscle contraction*, XLIII Summer School on Mathematical Physics (GNFM – INdAM), Ravello.
13. 5 July 2018: *On the stability of soft incompressible spheres with residual stresses*, 10th European Solid Mechanics Conference, Bologna.
14. 29 June 2017: *Rayleigh–Taylor instability in soft elastic layers*, International Workshop on Modelling of Nonlinear Continua, Castro Urdiales.
15. 12 Sep. 2016: *Chemo–mechanical feedback in solid tumor growth*, XLI Summer School on Mathematical Physics (GNFM – INdAM), Ravello.
16. 1 Sep. 2016: *Chemo–mechanical feedback in solid tumor growth*, workshop “Constitutive behaviour of soft tissues: connecting experimental and modelling perspectives”, University of Manchester.
17. 23 Sep. 2015: *A mathematical model of skeletal muscle tissue with damage due to aging*, XL Summer School on Mathematical Physics (GNFM – INdAM), Ravello.

ORGANIZING ACTIVITY

- Co-organizer (together with G. Giamberini e G.G. Giusteri) of the Workshop *Soft tissue biomechanics: From experiments to mathematical modelling* held at Università di Padova (16/6/2025 – 18/6/2025).
- Co-organizer (together with A. S. Boiardi and R. Matchello) of the mini-symposium *Mathematical Modelling in Soft Matter* at the congress of the *Italian Society of Applied and Industrial Mathematics 2023*, held at SISSA, Trieste (1/9/2025 – 5/9/2025).
- Member of the organizing committee of the workshop *Mathematics for our Health (M4H)*, <https://www.mate.polimi.it/events/M4H24/>.
- Co-organizer (together with C. Giverso, G. Lucci, G. Pozzi) of the mini-symposium *Mathematical modelling in biology* at the congress of the *Italian Society of Applied and Industrial Mathematics 2023*, held at the University of Basilicata (28/8/2023 – 1/9/2023).
- Member of the organizing committee of the conference *MOX 20* for the twentieth anniversary of the founding of MOX Laboratory, <https://mox.polimi.it/mox20/>.
- Co-organizer (together with V. Balbi) of the mini-symposium *Soft tissue biomechanics: From experiments to mathematical modelling* at the congress of the *Italian Society of Applied and Industrial Mathematics 2020-21* held at the University of Parma (30/8/2021 – 3/9/2021).

SUPERVISED STUDENTS

Co-supervised PhD students

R. Marchello | ongoing

- Programme: *Ph.D. in Mathematical Analysis, Modelling, and Applications*
- University: *SISSA*
- Title of the thesis: *TBD*
- Supervisor: *G. Noselli*

Supervised master's students

L. Le Saux | 2024

- Programme: *Master 1 in Mathématiques Appliquées*
- University: *Insitut Polytechnique de Paris, ENSTA*
- Title of the thesis: *A thermodynamically consistent mathematical model of cardiac contractility*

F. Magni | 2024

- Programme: *Laurea Magistrale in Ingegneria Matematica*
- University: *Politecnico di Milano*
- Title of the thesis: *A mathematical model of axonal beading based on the theory of active material surfaces*
- Currently Ph.D. student in Mathematical Analysis, Modelling, and Applications at SISSA

A. Conti | 2024

- Programme: *Laurea Magistrale in Ingegneria Informatica*
- University: *Politecnico di Milano*
- Title of the thesis: *Improving mathematical models of cancer by including resistance: A study on bladder cancer*

Co-supervised master's students

V. Pederzoli | 2024

- Programme: *Laurea Magistrale in Ingegneria Matematica*
- University: *Politecnico di Milano*
- Title of the thesis: *A mathematical model of brain atrophy in Alzheimer's disease*
- Supervisor: *P. F. Antonietti*
- Currently Ph.D. student in Mathematical Models and Methods in Engineering at Politecnico di Milano

D. Cerrone | 2023

- Programme: *Laurea Magistrale in Ingegneria Matematica*
- University: *Politecnico di Milano*
- Title of the thesis: *A Neural Network approach to Reduced Order Model of Glioblastoma Growth and its Neuroimaging-informed Estimation of Patient-Specific Parameters*
- Supervisor: *P. Ciarletta*

G. Ewald | 2022

- Programme: *Master 2, Génie Mécanique et Matériaux*
- University: *École des Ponts ParisTech*
- Title of the thesis: *Mechanical instabilities in materials with softening*
- Supervisor: *P. Ciarletta*

TEACHING EXPERIENCE

Lecturer

Rational mechanics

- *University and degree programme:* Bachelor's degree in Civil Engineering, Politecnico di Milano.
- *Academic year:* 2021–2022, 2022-2023, 2023-24, 2024-25.
- *Number of students:* ~40.
- *Language:* English.

Teaching Assistant

Rational mechanics

- *University and degree programme:* Bachelor's Degree in Biomedical Engineering and Telecommunication Engineering, Politecnico di Milano.
- *Academic year:* 2020–2021 (**2 courses**).
- *Number of students:* ~150.
- *Language:* Italian.

Calculus II

- *University and degree programme:* Bachelor's Degree in Electronic and Computer Engineering, Università di Trieste.
- *Academic year:* 2019–2020.
- *Number of students:* ~100.
- *Language:* Italian.

Linear algebra and geometry

- *University and degree programme:* Bachelor's Degree in Naval Architecture and Marine Engineering, Università di Trieste.
- *Academic year:* 2019–2020.
- *Number of students:* ~100.
- *Language:* Italian.

Mathematical and physical modeling in engineering

- *University and degree programme:* Master's Degree in Mathematical Engineering, Politecnico di Milano.
- *Academic year:* 2015-2016, 2016-2017, 2017-2018.
- *Number of students:* ~25.
- *Language:* English.

Calculus I

- *University and degree programme:* Bachelor's degree in Civil Engineering, Politecnico di Milano.
- *Academic year:* 2016-2017.
- *Number of students:* ~150.
- *Language:* Italian.

EDITORIAL AND REVIEWING ACTIVITY

Member of the editorial board of *Acta Mechanica Sinica*

Reviewer for the following journals

- *Applications in Engineering Science*
- *Bulletin of Mathematical Biology*
- *Communications in Nonlinear Science and Numerical Simulation*
- *Computer Methods and Programs in Biomedicine*
- *Continuum Mechanics and Thermodynamics*
- *Extreme Mechanics Letters*
- *International Journal of Engineering Science*
- *International Journal of Non-Linear Mechanics*
- *International Journal of Solids and Structures*
- *Journal of Applied Mechanics*
- *Journal of Elasticity*
- *Journal of Engineering Mathematics*
- *Journal of Mathematical Biology*
- *Journal of Mechanics of Materials and Structures*
- *Journal of the Mechanics and Physics of Solids*
- *Mathematics and Mechanics of Solids*
- *Mathematics in Engineering*
- *Meccanica*
- *Physical Review E*
- *Physical Review Letters*
- *Proceedings of the Royal Society A*
- *Soft Matter*
- *ZAMM - Journal of Applied Mathematics and Mechanics*

for a total of 65 reviews.

Reviewer for the following funding agencies

- *European Research Council* (Starting Grant)
- *Human Frontier Science Program* (Research Grants)

Reviewer for the Italian National Agency for the Evaluation of Universities and Research (ANVUR) for the Research Quality Evaluation (VQR 2020-2024)

Reviewer for the following Ph.D. thesis

- M. Ruggieri (Università Roma Tre, 2025)

Reviewer for Mathematical Reviews

INSTITUTIONAL ACTIVITY

- Since Mar 2025: member of the Board of the PhD Programme in “Mathematical Analysis, Modelling and Applications” at SISSA.
- Sep 2021 – Feb 2025: member of the Programme Board of Civil Engineering at the Politecnico di Milano.

RECRUITMENT

- June 2025: participation to the committee for the selection of two postdocs in mathematics and mathematical modelling at SISSA (SISSA Mathematical Fellowships).
- Feb 2024: participation to the committee for the selection of teaching assistants for the courses of Mathematical Physics at the Politecnico di Milano.
- Oct 2022: participation to the committee for the selection of a postdoc in Mathematical Physics at the Politecnico di Milano.
- Sept 2022: participation to the committee for the selection of tutors for the bachelor’s degree in Civil Engineering at the Politecnico di Milano.
- Jan 2022: participation to the committee for the selection of teaching assistants for the courses of Mathematical Physics at the Politecnico di Milano.
- Oct 2021: participation to the committee for the selection of a postdoc in Mathematical Physics at the Politecnico di Milano.

MEMBERSHIPS

- 2016–present: member of the *Gruppo Nazionale di Fisica Matematica* of the *Istituto Nazionale di Alta Matematica* (National Institute of Higher Mathematics).
- 2019–present: member of the *Italian Association of Theoretical and Applied Mechanics* (AIMETA)
- 2021–present: member of the *Italian Society of Applied and Industrial Mathematics* (SIMAI).

POPULARIZATION – ARTICLES

- D. Riccobelli. Un'introduzione ai modelli matematici. *Nuova Secondaria*, 9, 2016

POPULARIZATION – OTHER ACTIVITIES

- Participation to the “SISSA for schools” program (2019).
- Participation to the “Meet me tonight – Incontri con la scienza” (2017–2018).
- Tutor for high school students in preparation for the Italian Mathematical Olympiad (2014–2018).

Trieste, December 23, 2025