

Paolo Maria Mariano

Curriculum Vitae

Department of Civil and Environmental Engineering (DICEA)
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Personal information

Place and Date of Birth Galatina (Italy), May 19th, 1966
Citizenship Italian

Education

PhD Università di Roma “La Sapienza” – Program in Structural Engineering (sector: Theoretical and Applied Mechanics) – 19/09/1997
Laurea (Master Degree) Università di Roma “La Sapienza” – Civil Engineering (sector: Structural Engineering) – 1993
Diploma (High School Degree) Humanities – Liceo Classico “P. Colonna” – Galatina – 1984

Academic career

2017 Qualification for *Full Professorship* position in Mathematical Physics (SSD MAT/07 – currently renamed by the Ministry as 01/MATH-04) in the Italian University System.

2017 Qualification for *Full Professorship* position in “Scienza delle Costruzioni” (SSD ICAR/08 – currently renamed by the Ministry as 08/CEAR-06) in the Italian University System.

a.y. 2005/2006 – to – present *Associate Professor* of “Scienza delle Costruzioni” (SSD ICAR/08) in the University of Florence.

a.y. 2011/2012 – to – 2012/2013 *Adjunct Professor* of Theoretical Mechanics in the Scuola Normale Superiore, Pisa.

a.y. 2009/2010 In charge of the course “Mechanics of complex materials” in the Scuola Normale Superiore, Pisa.

a.y. 2008/2009 In charge of a series of seminars on “Mechanics of complex materials” in the Scuola Normale Superiore, Pisa.

a.y. 2010/2011 – to – 2011/2012 *Adjunct Professor* of Mechanics of Solids in the Gonzaga University, Campus Florence.

a.y. 1997/1998 – to – 2000/2001 *Adjunct Professor* of Mechanics of Solids in the University of Rome “La Sapienza”.

1996, 2003, 2004 *Research Associate* in the University of Pisa, Department of Mathematics.

Coordination of research groups in the employer institution

2022 – present *Coordinator* of the Interdepartmental Research Group “Mathematical Models, Analysis, and Structures” of the University of Florence.

Coordination Activity in other Institutions of High Education

2008 – present *Coordinator* (together with A. Mielke, WIAS Berlin) of the *Research Group in Theoretical Mechanics* at the “Centro di Ricerca Matematica E. De Giorgi” (CRM) of the Scuola Normale Superiore, Pisa.

November 25th-29th, 2013 *Coordinator* (together with C. Le Bris, CEREMADE Paris) of the intensive school *Multi-scale and Multi-field Representations of Condensed Matter Behavior* at CRM – Pisa.

November 7th-12nd, 2011 *Coordinator* (together with A. Mielke, WIAS Berlin) of the intensive school *Mathematical Principles for and Advances in Continuum Mechanics* at CRM – Pisa.

October 1st-7th, 2007 *Coordinator* (together with A. Mielke, WIAS Berlin) of the intensive school *Structures of the Mechanics of Complex Bodies* at CRM – Pisa.

Visiting Positions (with lectures delivered at research level)

February 2020 *Czech Academy of Sciences* (seminars on the mechanics of complex materials and fracture mechanics) – a second invitation in 2024.

May 2012 *University of Tartu*, Department of Mathematics (course on the mechanics of complex materials).

June 2012, July 2011, September 2010, May-June 2009, September 2008 *Polytechnic University of Madrid*, Department of Materials Science (on the mechanics of complex materials and fracture mechanics).

October – December 2009 *University of Zürich*, Department of Mathematics (course on fluid-dynamics).

February 2004, April – May 2004 *Polish Academy of Sciences*, Center of Excellence in Advanced Materials and Structures (lectures on damage mechanics).

Honors

August 4th, 2024 *Invited Lecture* to the World Congress Philosophy, Rome 2024 (sector Philosophy of Science, 45 min).

August 21th-23rd, 2024 *Plenary Lecture* to the Conference on Geometric Aspects in Mathematical Modeling, Madrid.

October 2023 – present *Accademico d'onore* (Honorary Fellow) of the “Accademia delle Arti del Disegno”, Firenze, elected on October 4th, 2023.

January 2019 – present *Corresponding Member* of the “Accademia Peloritana dei Pericolanti”, Messina, elected on January 8th, 2019.

April 14th, 2020 *Nomination in First Line* to the Class of Mathematics, Mechanics, and Applications, Category I, of the “Accademia dei Lincei”, Prot. n. 0000828 – U.

- November 27th, 2020 *Lectio Lincea 2020: "Il senso della natura per la matematica" (The Sense of Nature for Mathematics).*
- Aug. 30th – Sept. 2nd, 2010 *Plenary talk at STAMM-2010, Berlin.*
- May 29th – June 7th, 2010 *Plenary talk at CPEA-2010, Rackeve, Hungary.*
- 2006 Cover of the *Journal of Computational and Theoretical Nanoscience*, vol. 3, issue 4.
- 29 Invited lectures to international conferences.

Summary of publications

- Research works **109** papers in international journals (43 as a single author);
5 monographs (Birkhäuser-Springer, 2015, with modified version published by Bollati-Boringhieri in 2017; Castelvechi, 2016; *Aesthetica*, 2023; two under completion in 2023 for Birkhäuser-Springer and the American Mathematical Society);
19 books and special issues edited;
14 volume chapters in collective books;
34 full articles in conference proceedings;
37 extended abstracts.
- In addition **16** editorials;
26 journal papers and book chapters on history and philosophy of science;
2 didactic books in Italian;
7 book reviews (plus **131** reviews on *Mathematical Reviews*, including other three book reviews);
several articles on newspapers and **4** books for public engagement.

Editorial Activity

- 2023 – present Editor-in-Chief of the book series *Studies in Science and Technology*, Florence University Press.
- 2023 – present Editor-in-Chief (together with G. Mari) of the editorial partnership, Springer-Nature Group and Florence University Press.
- 2018 – present Editor-in-Chief (together with C. Dafermos and R. D. James) of the book series *Advances in Continuum Mechanics*, Springer-Nature Group.
- 2023 – present Editorial Board Member of *Proceedings of the Royal Society A: Mathematical, Physical, and Engineering Sciences*.
- 2018 – 2023 Editorial Board Member of *Philosophical Transactions of the Royal Society A*.
- 2010 – present Advisory Editor of *Mathematical Methods in the Applied Sciences*, Wiley.
- 2017 – present Associate Editor of *Journal of Optimization Theory and Applications*, Springer-Verlag.
- 2013 – present Editorial Board Member of *Structural Engineering and Mechanics*, Techno-Press.
- 2013 – present Editorial Board Member of *Structural Monitoring and Maintenance*, Techno-Press.
- 2016 – present Editorial Board Member of *Journal of Multiscale Modeling*, World Scientific.
- 2015 – present Editorial Board Member of *Coupled Systems Mechanics*, Techno-Press.
- 2017 – present Scientific Committee Member of *Florence University Press*.

- 2012 – present Editorial Board Member of *Prometeo* (Italian Quarterly on History and Philosophy of Science), Mondadori.
- 2024 – present Editorial Board Member of *Città di Vita* (Italian Quarterly on History, Literature, and Philosophy), Aboca.
- 2012 – 2013 Editorial Board Member of *Materials Sciences and Applications*, Scientific Research.
- 2012 – 2017 Editorial Board Member of *ISRN Engineering Mechanics*, Hindawi.
- 2012 – 2016 Editorial Board Member of *Mathematical Problems in Engineering*, Hindawi.
- 2017 – 2019 *Springer Consulting Editor for book series*.
- Reviewer for (1) *Math. Rev.*, (2) *Proc. Royal Soc. London A*, (3) *Int. J. Num. Meth. Eng.*, (4) *J. Physics A: Math. Theor.*, (5) *J. Math. Phys.*, (6) *Rendiconti Lincei*, (7) *J. Geom. Phys.*, (8) *Il Nuovo Cimento B*, (9) *Phys. Lett. A*, (10) *Physica B*, (11) *Comp. Meth. Appl. Mech. Eng.*, (12) *Physica Status Solidi B*, (13) *Int. J. Solids Struct.*, (14) *J. Elasticity*, (15) *Appl. Math. Mod.*, (16) *Math. Meth. Appl. Sci.*, (17) *Int. J. Fracture*, (18) *Boll. UMI B*, (19) *ASCE J. Eng. Mech.*, (20) *Comp. Struct.*, (21) *Comp. Math.*, (22) *Meccanica*, (23) *Int. J. Math. Math. Sci.*, (24) *Eng. Struct.*, (25) *Mech. Struct. Mach. (presently closed)*, (26) *ZAMM*, (27) *SIAM J. Math. Analysis*, (28) *Multiscale Mod. Simul.*, (29) *Mech. Res. Comm.*, (30) *Comm. Nonlinear Sci. Num. Simul.*, (31) *Discr. Cont. Dyn. Systems - B*, (32) *Mech. Mat.*, (33) *J. Mech. Mat. Struct.*, (34) *Rep. Math. Phys.* (35) *Arch. Rational Mech. Anal.* (36) *J. Math. Anal. Appl.*, (37) *Math. Mech. Solids*, (38) *ZAMP*, (39) *J. Mat. Sci.: Materials in Electronics*, (38) *Theor. Appl. Frac. Mech.*, (39) *Appl. Phys. Lett.*, (40) *Nonlinear Anal. Real World Appl.*, (41) *Adv. Math. Phys.*, (42) *J. Nonlinear Sci.*, (43) *Cont. Mech. Thermodyn.*, (44) *Int. J. Heat Mass Trasf.*, (45) *European J. Mechanics B-Fluids*, (46) *Nonlinear Analysis: Theory Meth. Appl.*, (47) *AIMS Mathematics*, (48) *Acta Mechanica*, (49) *Indian J. Phys.*, (50) *J. Appl. Phys.*, (51) *Sensors*, (52) *Symmetry*, (53) *Mathematics*, (54) *Materials*, (55) *Ann. Univ. Ferrara*.
- Journal Special Issues (details in the list of publications) Edited (1) *Int. J. Solids Structures*, Elsevier, vol 38, n° 6-7, 2001, 939-1264 (with G. Capriz); (2) *Meccanica*, Springer, vol. 40, n° 4-6, 2005, 327-525 (with G. Capriz); (3) *Computers & Mathematics*, Elsevier, vol. 55, n° 2, 2008, 131-318 (with G. Capriz and P. Giovine); (4) *Physica D*, vol. 239, n° 15, 2010, 1379-1502 (with G. Frosali and G. Modica); (5) *Algorithms*, MDPI, 2009 (with S. Mariani and P. Venini); (6) *Math. Meth. Appl. Sci.*, Wiley, vol. 35, n° 15, 2012, 1737-1929; (7) *Discrete Cont. Dyn. Systems B*, vol. 17, n° 2, 2012, 445-733 (with M. Focardi); (8) *Phil. Trans. Royal Society A*, issue 2066, 2016; (9) *Meccanica*, Springer, vol. 54, n° 4-5, 2018, 595-748 (with P. Giovine, G. Mortara, and K. Soga); (10) *Int. J. Solids Structures*, Elsevier, vol. 167, 2019, (with C. Di Prisco, P. Giovine, S. Kyriakides, and G. Mortara), vol. 187, pp. 1-162; (11) *J. Opt. Theory Appl.*, Springer, 2020, vol. 184, n° 1, pp. 1-314; (12) *Phil. Trans. Royal Society A*, 2023, vol. 381, issue 2263, pp. 207 (with A. Schlömerkeper).
- Books edited (details in the list of publications) (1) Birkhäuser, 2004, pp. 263 (with G. Capriz); (2) Elsevier, 2007, pp. 342 (with G. Capriz); (3) *Lecture Notes in Mathematics*, Springer, 2008, pp. 232 (with G. Capriz and P. Giovine); (4) Birkhäuser Springer, 2019, pp. 418 (with P. Giovine and G. Mortara); (5) Birkhäuser Springer, 2020 pp. xii+280 (with P. Giovine and G. Mortara), (6) Birkhäuser, 2022, pp. xi+309.

Mentoring

- PhD Theses 6 (+ 5 unofficial) – among those students [1] F. L. Stazi - recipient of 2003 ECCOMAS prize for the best PhD thesis in computational mechanics; [2] P. Paoletti - Senior Lecturer in the University of Liverpool; [3] M. Bacci - head the modeling team of Blue Marble Insurance, Chiasso; [4] L. Sabatini - adjunct professor in the Dept. of Mathematics of the University of Rome “La Sapienza”.

- Master and Bachelor Theses **13** master theses (some of them in collaboration with GeorgiaTech, École Nationale de Ponts et Chaussées, INRIA Lyon, Institut Polytechnique Bordeaux, Scuola Normale Superiore) – among those students [1] **F. Maresca** - assistant professor in Gröningen; [2] **G. Franchetti** - research associate University of Bath; [3] **F. Masi** - post-doc University of Sidney; [4] **D. Zeka** – PhD student École Normale Supérieure, Paris (solemn commendation for his thesis in 2021); [5] **D. La Pegna** - PhD student in the Scuola Normale Superiore, Pisa (solemn commendation for his thesis in 2024). **22** bachelor theses – among the pertinent students, **F. Mugnaioni** - PhD student in the Scuola Normale Superiore, Pisa.
- Post-docs and research fellows [1] Dr. **L. Bisconti** (2017/2018, presently associate professor in the Dept. of Mathematics in the University of Florence), [2] Dr. **L. Salvatori** (2005/2010, presently associate professor ICAR09 in the Dept. of Civil Eng. in the University of Florence), [3] Dr. **J. Polikarpus** (2021/2022, presently tenured researcher in the Dept. of Mathematics of the Tartu University).

Scientific-Administrative Responsibilities

- 2009-2010 Member of two committees for tenure track/tenure transition of associate professors in Italy.
- 2017 – present Board member of the PhD program for the International Doctorate in Civil and Environmental Engineering, University of Florence.
- 2008 – 2009 Board member of the PhD program Nonlinear Dynamics and Complex Systems, University of Florence.
- 2005 – present Reviewer for the “Université Franco-Italienne” of the joint research projects France-Italy.
- 2012 – present Reviewer for ANVUR (Italian National Agency for University Evaluation).
- 2017 – present Reviewer of research projects for the Estonian Research Council.
- 2023 Reviewer of research projects for the University of Eastern Piedmont.
- 2016 – 2019 President of the Librarian System for the Technological Pole of the University of Florence.
- 2016 Reviewer for JSC “National Centre of Science and Technology Evaluation”, Kazakhstan (appointment renewed in 2020).
- 2015 Member of the committee for the evaluation for associate professorship of Dr. Abdul Majid, Faculty of Science, University of Gujrat, Pakistan.
- 2020 Called to be member of the committee for the evaluation for full professorship of Dr. Abdul Majid, Faculty of Science, University of Gujrat, Pakistan (declined).
- 2016 Reviewer of Skoltech (Skolkovo Institute of Science and Technology), Oblast’ of Moscow.
- 2020 Reviewer for the NWO (Dutch Research Council) – projects VIDI.

Organization of Congresses and Symposia

- April 28-30, 2025 *Member of Scientific Committee* of the World Summit and Expo on Mechanical and Mechatronics Engineering (WSEMME-2025), Rome, Italy.

- December 14th-15th, 2024 *Member of the Technical Program Committee* of the 2024 International Conference on Applied Mathematics and Information Systems (AMIS 2024) – Beijing, China.
- August 28th-29th, 2023 *Member of the International Paper Committee* of the International Conference Optimization and Analysis of Structures – OAS 2023, Tartu, Estonia.
- February 25th, 2022 *Organizer* with A. Salvadori (Brescia) of the Symposium on “Biomeccanica e Meccanobiologia nel tempo presente”, Firenze.
- November 9th, 2020 *Organizer* with F. Angotti and G. Frosali of the Symposium “Matematica e Ingegneria: una fruttuosa interazione”, Firenze.
- May 28th – June 1st, 2018 *Scientific Board Member* of the Conference on Micro-to-Macro Modeling in Soil Mechanics, Reggio Calabria.
- January 25th – 26th, 2018 *Organizer* of the 17th GAMM Seminar on Microstructures, together with G. Dolzmann (Regensburg) and K. Weinberg (Siegen), Firenze.
- July 18th – 20th, 2017 *Conference Chairman*, together with F. Aliabadi (London), S. Baragetti (Milan), C. Pappalettere (Bari), C. Casavola (Bari), of the 15th International Conference on Fracture and Damage Mechanics, Firenze.
- August 24th – 28th, 2014 *Scientific Committee Member* of the 2014 International Conference Advances in Structural Monitoring and Maintenance, BEXCO in Budan, Korea.
- September 9th – 11th, 2013 *Scientific Committee Member* of the 2013 IUTAM Symposium on Multiscale and Uncertainty Quantification of Materials and Structures, Santorini.
- June 21st – 25th, 2010 *Organizer* with M. Focardi (Florence) of the Symposium “Geometrical and Analytical Problems in Continuum Mechanics” within SIMAI 2010, Cagliari.
- March 6th, 2009 *Organizer* of the Symposium “Modelli e problemi nella meccanica dei materiali”, Firenze.
- April 2008 *Organizer* with G. Frosali and G. Modica (Firenze) of the Symposium “Evolution Equations in Pure and Applied Sciences”, Firenze.
- September 1st – 3rd, 2007 *Organizer* of the Symposium “Mathematical Lectures”, on behalf of CRM, Scuola Normale Superiore, Lizzano (Lecce).
- July 16th – 20th, 2007 *Organizer* with T. J. Pence (East Lansing) and E. Vanden-Ejinden (New York) of the Symposium “Geometric and Stochastic Aspects of the Mechanics of Complex Bodies”, within ICIAM-2007, Zürich.
- May 22th – 26th, 2006 *Organizer* of the Symposium “Models of Multi-Scale Phenomena in Simple and Complex Bodies”, within SIMAI-2006, Baia Samuele.
- Sept. 11th – 15th, 2005 *Organizer* with G. Capriz (Pisa) of the “Minisymposium Nanotechnologies: Building up Structures at the Nano and Meso-Scales”, within AIMETA 2005, Firenze.
- September 2001 *Organizer* with G. Capriz (Pisa) of the “Minisymposium on Multifield Theories”, within AIMETA-2001, Taormina.

Teaching in the employer institution (holder of the course)

- a.y. 2012/2013 – to – present *Scienza delle Costruzioni (Mechanics of Continua and Structures) – 9 CFU (Mech. Eng.).*
- a.y. 2022/2023 – to – present *Metodi Avanzati di Meccanica dei Continui per Materiali e Strutture – 6 CFU (Mech. Eng.).*
- a.y. 2022/2023 – to – present *Laboratorio di Metodi Avanzati di Meccanica dei Continui per Materiali e Strutture – 3 CFU (Mech. Eng.).*
- a.y. 2015/2016 – to – 2021/2022 *Meccanica Teorica (Theoretical Mechanics) – 6 CFU (Mech. Eng.).*

a.y. 2016/2017 – to – 2021/2022	Laboratorio di Meccanica Teorica (Laboratory of Theoretical Mechanics) – 3 CFU (Mech. Eng.).
a.y. 2006/2007 – to – 2011/2012	Scienza delle Costruzioni (Mechanics of Continua and Structures) – 6 CFU (Mech. Eng.).
a.y. 2012/2013 – to – 2013/2014	Teoria delle strutture (Structural Analysis) – 6 CFU (Civil Eng.).
a.y. 2010/2011 – to – 2013/2014	Teoria delle strutture (Structural Analysis) – 9 CFU (Civil Eng.).
a.y. 2009/2010	Meccanica delle Micro e Nano Strutture (Mechanics of Micro and Nano-Structures) – 6CFU (Mech. Eng.).
a.y. 2006/2007 – to – 2008/2009	Meccanica delle Strutture (Structural Mechanics) – 6CFU (Mech. Eng.)
a.y. 2005/2006	Teoria della strutture (Structural Analysis) – 5CFU (Civil Eng.).
a.y. 2021/2022	Doctoral course: Topological Continuum Mechanics.
a.y. 2020/2021	Doctoral course: Variational Principles in Mechanics – a Primer.
a.y. 2019/2020	Doctoral course: Invariance Principles in Continuum Mechanics.
a.y. 2017/2018	Doctoral course: Are the dynamics of solids and the one of fluids separate fields?

Miscellaneous Information

August 21 th – 23 rd , 2024	<i>Plenary Talk</i> in the Colloquium on Geometric Aspects in Mathematical Modeling, Madrid, Spain.
January 22 nd – 23 th , 2010	<i>Key-note Lecturer</i> in 9th GAMM Seminar on Microstructures, Stuttgart, Germany.
August 22 nd – 30 th , 2006	<i>Chairman</i> of a sub-session of the sector Mathematical Physics at the International Congress of Mathematicians ICM 2006, Madrid.
June 14 th – 17 th , 2005	<i>Key-note Lecturer</i> of a session at the Symposium on Probabilistic Mechanics within the Third MIT Conference on Computational Fluid and Solid Mechanics, Boston.
Seminars delivered in several universities	MIT, Yale, Northwestern, Brown, École Polytechnique, Versailles et Saint Quentin en Yvelines, Poitiers, IPPT Warsaw, WIAS Berlin, Politecnica de Madrid, University of Zuerich, Scuola Normale Superiore, Politecnico di Milano, Politecnica delle Marche, Università del Salento, Università di Messina, Charles University Prague, Budapest University of Technology, Università di Pavia, Università di Ferrara.
Invited lectures in conferences	28 (Rio '99; Chania '00; Brescia '00; MIT '01, '03, '05; Osaka '02; Cagliari '02; Albuquerque '03, '04; Torino '05; Erlangen '08; Pisa '98; Gainesville '98; Giardini Naxos '98; Ischia '00; Venezia '03; Troyes '05; Alexandropolis '06; Porto '10; Budapest '17; Prague '20(2), '21; Firenze '17, '22; Salerno '23, Paris '23) – several other invitations declined for different reasons.
Society Membership	AIMETA (until 2009); ISIMM; EUROMECH (until 2009); GNFM-INDAM; IASSAR (board SC4) (until 2009); Society for Natural Philosophy; ECCOMAS; Commission 1 of the UNI, Italian Institute of Standards (until 2005).

Public Engagement - summary

Newspapers	Rather regular contributions on the cultural pages of newspapers like “Il Galatino” (collaboration ended in 2020), “Il Riformista” (collaboration ended in 2012), “Il Paese Nuovo” (currently closed), “Il Sole24ore” (collaboration ended in 2020), and “Il Nuovo Quotidiano di Puglia” (71 articles published since 2017 in the cultural pages), “Avvenire”.
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- 2022 Monograph: “Vite riflesse in un catino – 23 sogni per Hilbert”, Mimesis.
- December 15th, 2021 *Seminar* at the Accademia delle Arti e del Disegno (Florence) on the role of the aesthetic factor in science.
- 2020 Monograph: “Gli occhi di Eulero”, Mimesis.
- 2020 Silloge: “Del fiume e degli alberi”, Thedotcompany.
- January-February 2020 4 seminars delivered in the Academy of Arts in Florence on Euler.
- October 13rd – 14th, 2018 *Seminar* at the Accademia Vivarum Novum (Frascati) on the role of the aesthetic factor in science.

October 11th, 2024.