

PERSONAL INFORMATION

Vianello, Maurizio Stefano



PERSONAL STATEMENT

Autorizzo il Politecnico di Milano a pubblicare il presente curriculum sul sito WEB di Ateneo, ai fini istituzionali e in ottemperanza al D. Lgs n. 33 del 14 marzo 2013 "Decreto trasparenza" come modificato dal D. Lgs. 97 del 2016.

WORK EXPERIENCE

2000–Present

Professor of Mathematical Physics

Politecnico di Milano
Piazza Leonardo da Vinci 32, 20133 Milan (Italy)
www.polimi.it

Research in Mathematical Physics

Teaching:

- Continuum Mechanics
- Rational Mechanics
- Mathematics and Mechanics of Solids
- Physical-Mathematical Modelling for Engineering
- Linear Algebra and Geometry
- Probability and Statistics
- Applied Mathematics for Architecture

Ph.D Courses:

- Solid Mechanics for Discrete Modelling of Structures
- Fundamentals of Parametric Modelling: from Architectural Geometry to the Design of Architectural Forms and their Functions
- Advanced Continuum Mechanics

Business or sector Education

2010–2015

Vice Dean

School of Civil Architecture (Politecnico di Milano), Milano (Italy)

- Responsible for international relations
- Scheduling and teaching organization
- Responsible for the admission test

1992–2000

Associate Professor of Mathematical Physics

Politecnico di Milano

Research on Continuum Mechanics

Teaching of:

- Rational Mechanics, for students of Management Engineering
- Rational Mechanics, for students of Biomedical Engineering

1981–1992 **Assistant Professor of Mathematical Physics**

Politecnico di Milano

Research on Continuum Mechanics

Teaching of:

- Recitation classes on Rational Mechanics
- Rational Mechanics, for students of Electronic Engineering

EDUCATION AND TRAINING

1982–1984 **Ph. D. in Mathematics**

EQF level 8

Carnegie-Mellon University, Pittsburgh (United States)

Principal subject covered: Continuum Mechanics

Title of qualification awarded: Ph. D. in Mathematics

Ph. D. thesis adviser: Morton E. Gurtin

Thesis title: On second-grade fluids

1982–1982 **Master of Science (MS), Mathematics**

EQF level 7

Carnegie-Mellon University, Pittsburgh (United States)

Applied Mathematics

1971–1975 **B.S. in Mathematics (Laurea in Matematica)**

EQF level 6

Università Statale di Milano (Milan State University), Milano (Italy)

Graduation grade: 110/100 cum laude (with honours)

Major: Mathematics

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C2	C1	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
 Common European Framework of Reference for Languages

Organisational / managerial skills

(2015-) Associate Editor of "Mathematics and Mechanics of Solids", SAGE Publishing Group.

(2000-2006) Member of the Scientific Committee of the Department of Mathematics of Polytechnic of Milan (Italy).

ADDITIONAL INFORMATION

Major Publications

A. Morro and M.V., *Interstitial energy flux and stress-power for second-gradient elasticity*. Mathematics and Mechanics of Solids 21(4): 403-412 (2016) (DOI: 10.1177/1081286514522475) .

S. Forte and M.V., *A unified approach to invariants of plane elasticity tensors*. Meccanica 49(9):2001-2012, (2014) (DOI:10.1007/s11012-014-9916-y) .

M.V., *Internal Constraints in Finite Elasticity: Manifolds or not*. Journal of Elasticity 114:197-211, (2014) (DOI:10.1007/s10659-013-9435-4) .

- M. Destrade, G. Saccomandi and M.V., *Proper formulation of viscous dissipation for nonlinear waves in solids*. The Journal of the Acoustical Society of America 133(3):1255–1259, (2013) (DOI:10.1121/1.4776178) .
- P. Podio-Guidugli and M. V., *On a stress-power-based characterization of second-gradient elastic fluids*. Continuum Mechanics and Thermodynamics 25(2-4):399–421 (2013) (DOI 10.1007/s00161-012-0267-4) .
- P. Podio-Guidugli and M. V., *Some remarks prompted by a commentary due to Professors F. Dell'Isola and P. Seppecher*. Continuum Mechanics and Thermodynamics 23(5):479–481, (2011) (DOI:10.1007/s00161-010-0135-z) .
- P. Antonietti, P. Biscari, A. Tavakoli, M. Verani and M. V., *Theoretical study and numerical simulation of textiles*. Appl. Math. Model, 35(6): 2669-2681 (2011) (DOI:10.1016/j.apm.2010.11.062) .
- P. Podio-Guidugli and M. V., *Hypertractions and hyperstresses convey the same mechanical information*. Continuum Mechanics and Thermodynamics 22(3):163–176, 2010 (DOI: 10.1007/s00161-010-0135-z, 2010).
- S. Forte and M. V., *Restricted invariants on the space of elasticity tensors*. Mathematics and Mechanics of Solids 11(1):48–82, 2006 (DOI: 10.1177/1081286505046483, 2005).
- V. Testa and M. V., *The symmetry group of gradient sensitive fluids*. Int. Journal of Non-Linear Mechanics 40:621–631, 2005.
- P. Chadwick, S. Cowin and M. V., *A new proof that the number of elastic symmetries is eight*. J. Mech. Phys. Solids 49(11):2471–2492, 2001.
- S. Forte and M. V., *Functional bases for transversely isotropic and transversely hemitropic invariants of elasticity tensors*. Q. Jl. Mech. Appl. Math. 51(4):543–552, 1998.
- C. Sgarra and M. V., *Rotations which make strain and stress coaxial*. J. Elasticity 47:217–224, 1997.
- G. Saccomandi and M. V., *A universal relation characterizing transversely hemitropic hyperelastic materials*. Math. Mech. Solids. 2:181–188, 1997.
- C. Sgarra and M. V., *Directions of coaxiality between pure strain and stress in linear elasticity*. J. Elasticity 46:263–265, 1997.
- S. Forte and M. V., *Symmetry classes and harmonic decomposition for photoelasticity tensors*. Internat. J. Engrg. Sci. 35(14):1317–1326, 1997.
- M. V., *An integrity basis for plane elasticity tensors*. Archives of Mechanics 49(1):197–208, 1997.
- M. V., *Optimization of the stored energy and coaxiality of strain and stress in finite elasticity*. J. Elasticity 44:193–202, 1996.
- M. V., *Coaxiality of strain and stress in anisotropic linear elasticity*. J. Elasticity 42:283–289, 1996.
- S. Forte and M. V., *Symmetry classes for elasticity tensors*. J. Elasticity 43(2):81–108, 1996.
- S. Forte and M. V., *Internal constraints and bifurcations in pseudo-rigid bodies*. Math. Model Methods Appl. Sci. 6(7):1009–1025, 1996.
- A. Danescu, P. Podio-Guidugli and M. V., *On the differentiability of local representations of isotropic constraints*. Special Issue of the Bulletin of the Technical University of Istanbul ``Suhubi and Continuum Mechanics'', E. Inana, editor, vol. II, 1994.
- A. Danescu, P. Podio-Guidugli and M. V., *Constraint groups*. J. Elasticity 37(1):91–92, 1994/95.
- P. Podio Guidugli and M. V., *Linearization of response mappings in constrained elasticity*. Journal of Elasticity 34:185–189, 1994.
- P. Podio-Guidugli and M. V., *Internal constraints and linear constitutive relations for transversely isotropic materials*. Rend. Mat. Acc. Lincei 21:241–248, 1991.
- M. V., *Constraint manifolds with constant reaction spaces*. Meccanica 25:189–191, 1990.
- P. Podio-Guidugli and M. V., *The representation problem of constrained linear elasticity*. Journal of Elasticity 28:271–276, 1990.
- M. V., *On the active part of the stress for elastic materials with internal constraints*. Journal of Elasticity 24:289–294, 1990.
- M. V., *The representation problem for constrained hyperelastic materials*. Arch. Rational Mech. Anal. 111(1):87–98, 1990.
- A. Morro and M. V., *Minimal and maximal free energy for materials with memory*. Boll. Unione Mat. Ital. 4-A:45–55, 1990.
- M. V., *On the equilibrium theory of second grade fluids*. Arch. Mech. 41:641–649, 1989.

- A. Morro and M. V., *Free energy and internal variables in linear viscoelasticity*. Rend. Accad. Naz. Lincei LXXXIII 215–219, 1989.
- P. Podio-Guidugli and M. V., *Constraint manifolds for isotropic solids*. Arch. Rational Mech. Anal. 105(2):105–121, 1989.
- M. V., *On Blinowski's second grade materials*. Arch. Mech. 41:181–184, 1989.
- S. Forte and M. V., *On surface stresses and edge forces*. Rendiconti di Matematica Serie VII 8:409–426, 1988.
- M. E. Gurtin, M. V. and W. O. Williams, *On fluids of grade n* . Meccanica 21:179–183, 1986.
- M. V., *Sull'equilibrio di membrane con contorno materiale*. Rend. Ist. Lombardo Cl. A 114:243–253, 1980.
- M. V., *Sull'equilibrio di membrane a curvatura costante non semplicemente connesse*. Rend. Ist. Lombardo Cl. A 113:161–169 1979.

Books

- P. Biscari, G. Saccomandi, T. Ruggeri and M. V., *Meccanica Razionale* (A Textbook on Rational Mechanics for students of Engineering). Springer Italia, 3rd edition 2016. ISBN 978-88-470-5772-2 , ISBN 978-887-470-5773-9 (eBook).

Conferences

- "Interstitial energy flux and stress-power for second-gradient elasticity", 4th Canadian Conference on Non Linear Solid Mechanics, Montreal, QC (Canada), July 2013.
- "Hypertractions and Hyperstresses in Second-Gradient Continua", SIAM General Meeting, Minneapolis, MN (USA), July 2012.
- Introductory course on "Waves in elastic materials", Summer School of "Gruppo Nazionale per la Fisica Matematica", Ravello (Italy), 2009.
- New trends in Mathematical Physics, Lecce (Italy), 2004.
- Mathematical problems in Elastodynamics and related Continuum Theory, Cortona (Italy), 2003
- Third SIAM Conference on Mathematical Aspects of Material Science, Philadelphia (USA) 2000.
- Invited lectures on Continuum Mechanics at the Mathematical Institute of the Academy of Sciences of the Czech Republic, Prague (CZ), 1997.
- Fourth Meeting on Current Ideas in Mechanics and Related Fields, Krakow (Poland) 1997.
- Second SIAM Conference on Mathematical Aspects of Material Science, Philadelphia (USA) 1997.
- International meeting of Accademia dei Lincei, Mechanical and Analytical Microstructures, Roma (Italy) 1994.
- CIRM Meeting, Calculus of Variations, Elasticity and Crystals, Trento (Italy) 1989.
- XXXII Meeting of the Society for Natural Philosophy, Geometrical and Topological Methods in Mechanics, Calgary (Canada) 1989.
- IX AIMETA Congress, Bari (Italy) 1988.