

Curriculum Vitae

Personal Information

Name: Francesco,
Family Name: dell'Isola,

ITALIAN CITIZEN

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Affiliations

Università degli Studi dell'Aquila

The International Research Center for Mathematics & Mechanics of Complex Systems
(M&MoCS)

Research Institute for Mechanics, National Research Lobachevsky State University of Nizhni
Novgorod

Grant

2018 to now Winner of the grant from the Government of the Russian Federation (contract
No. 14.Y26.31.0031)

Degrees and distinctions

1986 Laurea in Fisica (M.Sc.) Università' di Napoli Federico II

1992 Dottorato per la ricerca in Fisica Matematica (Ph.D.) Ministero per la Ricerca Scientifica e
Tecnologica Roma Italia. Thesis title: Rational Thermodynamics of Nonmaterial Bidimensional
Continua.

1995 Qualification aux fonctions de Maitre de Conferences 60eme sect. n.9526040753
8/2/1995 Paris France

2004 Adjunct Associate Professor Virginia Polytechnic Institute and State University

2005 Idoneità Nazionale alle funzioni di Professore Ordinario, Commissione Nazionale presso
Università di Roma La Sapienza. (Full professorship qualification)

Patent obtained by US Patent office. United States Patent 6546316. Two dimensional network
of actuators for the control of damping vibrations. Net-Control systems of structural vibrations
co-inventors: Edmund Henneke, Stefano Vidoli

Career and Teaching Activity

1988-1991 Professore Incaricato (temporary appointment as Professor) del Corso Analisi Matematica II (Advanced Calculus) Facoltà di Scienze Economiche e Sociali Università del Molise Campobasso Italia

1990-1993 Professore Incaricato (temporary appointment as Professor) del Corso di Biomeccanica Facoltà di Medicina – Università di Napoli Federico II

1991-1992 Ricercatore s.s.d. Fisica Matematica (Tenured Assistant Professor) Facoltà di Scienza Matematiche-Fisiche e Naturali Università di Napoli Federico II

1992-1998 Ricercatore s.s.d. (Tenured Assistant Professor) Scienza delle Costruzioni Facoltà di Ingegneria-Università di Roma La Sapienza ROMA

1993 Maitre de Conferences Course in Solid Mechanics Université de Toulon et du Var

1995 Maitre de Conferences Course in Continuum Mechanics Université de Aix-Marseille III

1995-1998 Professore Supplente (temporary appointment as Professor) del Corso di Scienza delle Costruzioni Facoltà di Ingegneria- Università di Roma La Sapienza ROMA

1998- 2006 Professore Associato (Associate Professor) gruppo H07A Scienza delle Costruzioni Facoltà di Ingegneria- Università di Roma La Sapienza ROMA

1998-2019 Member of the Doctoral School in Teoretical and Applied Mechanics (membro del Collegio dei Docenti del Dottorato in Meccanica Teorica ed Applicata) Università di Roma "La Sapienza"

2000 Visiting Associate Professor Corso di Elasticità Virginia Polytechnical Institute and State University

2005 Professeur invité à l'Université de Versailles

2006-2009 Professore Straordinario di Scienza delle Costruzioni Facoltà di Ingegneria Università di Roma "La Sapienza"

2009-2020 Professore Ordinario di Scienza delle Costruzioni Facoltà di Ingegneria Università di Roma "La Sapienza"

2009 Membro del Consiglio Didattico-Scientifico del [Master Internazionale di Secondo Livello ANALISI E CONTROLLO DELLE VIBRAZIONI IN APPLICAZIONI CIVILI ED INDUSTRIALI](#), Università degli studi di Roma "La Sapienza", Dipartimento di Ingegneria Strutturale e Geotecnica Dipartimento di Meccanica e Aeronautica

2014-2015 Visiting Professor at Università degli Studi di Catania in the context of the course "piezo-electromechanical systems" coordinated by Prof. Massimo Cuomo

2014-2016 In charge of the course "Mathematical Models for Engineering" at Warsaw University of Technology, (co-teaching with Prof. Tomasz Lekszycki).

2018 Russell Severance Springer Professor at University of California, Berkeley, USA.

2020-to present Professore Ordinario di Scienza delle Costruzioni Dipartimento DICEAA Università degli Studi dell'Aquila

Administrative Responsibilities

2003-2016 Scientific Responsible: Laboratorio Strutture e Materiali Intelligenti Cisterna di Latina

2012 – to present Member of the Executive Committee of the Research Center M&MoCS, University of L'Aquila

2014 – 2018 Membre du Conseil scientifique de l'Institut des sciences de l'ingénierie et des systèmes – CNRS

2015 – 2018 Member of the Council of the Research Center CERFIS, University of L'Aquila, as representative of the International Research Center M&MoCS

2016 – present Director of the Research Center M&MoCS, University of L'Aquila

Membership of Editorial Boards of International Journals

2019 – to present [Member](#) of the **Editorial Board** of [Journal of Samara State Technical University. Ser. Phys. Math. Sciences . Invitation Letter](#)

2018 – to present Member of the **Editorial Advisory Board** of [Acta Mechanica](#).

2018 – 2020 [Member](#) of the **Editorial Board** of [ZAMM – Journal of Applied Mathematics and Mechanics / Zeitschrift für Angewandte Mathematik und Mechanik](#) .

2017 – to present [Member](#) of the **Editorial Board** of [Modern Engineering](#).

2017 – to present [Member](#) of the **Editorial Board** of [Journal Mechanics of Solids. Invitation Letter](#)

2017-2020 [Member](#) of **Editorial Board** of [Proceedings of the Royal Society A](#)

2014 – to present Member of [European Journal of Environmental and Civil Engineering](#) (EJECE)

2014 – to present Editor of [PNRPU Mechanics Bulletin](#)

March 2013 Guest Editor (with Samuel Forest) of the [Special Issue of Continuum Mechanics and Thermodynamics](#).

Pursuing the Progress of Mechanics, in the Spirit of the Founders, a Special Issue on the occasion of the retirement of Prof. Gianpietro Del Piero, Vol. 25, Issue 2-4, March 2013

2013 – to present Editor of [Continuum Mechanics and Thermodynamics](#)

2012- to present [Mathematics and Mechanics of Solids](#)

2012 – to present Co-Founder of [Mathematics and Mechanics of Complex Systems](#) (M&MoCS)

2012 – to present The Book series of [Modern Mechanics and Mathematics](#)

2002 – to present [International Journal of Applied Electromagnetics and Mechanics](#)

2000 – to present [Research in Nondestructive Evaluation](#) (RNDE)

Doctoral and Selection Committees

Professor dell'Isola has been either supervisor or member of the Master of Doctoral Committees for the following candidates:

2000 – Dr Stefano Vidoli (Doctor of Philosophy in Theoretical and Applied Mechanics at Università di Roma La Sapienza). Title: "*Structures and control: continuum integrated models*"

2002 – Dr Giulio Sciarra (Doctor of Philosophy in Theoretical and Applied Mechanics at Università di Roma La Sapienza — Docteur en Mécanique at Université du Sud-Toulon Var). Title: "*Modeling of a fluid flux through a solid deformable matrix*"

2005 – Dr Maurizio Porfiri (Doctor of Philosophy in Theoretical and Applied Mechanics at Università di Roma La Sapienza — University of Toulon). Title: "*Performances of passive electric networks and piezoelectric transducers for beam vibration control*"

2005 – Dr Corrado Maurini (Doctor of Philosophy in Theoretical and Applied Mechanics at Università di Roma La Sapienza — Université Pierre et Marie Curie, Ecole Doctorale SMAE). Title: "*Piezoelectric composites for distributed passive electric control: beam modelling, modal analysis, and experimental implementation*"

2006 – Dr Luca Placidi (Doctor of Philosophy in Theoretical and Applied Mechanics at Università di Roma La Sapienza). Title: "*Microstructured continua treated by theory of mixtures*"

2009 – Dr Angela Madeo (Doctor of Philosophy in Theoretical and Applied Mechanics at Università di Roma La Sapienza). Title: "*Variational Techniques in Poroelasticity*"

2009 – Dr Lachouette Damien, at Institute de Mathématiques de Toulon et du Var, Université du Sud Toulon-Var, Toulon (France). Title: "*Modélisation d'une interface fluide/solide avec érosion. Application à l'érosion interne*"

2010 – Dr Giuseppe Rosi (Doctor of Philosophy in Theoretical and Applied Mechanics at Università di Roma La Sapienza and Université Pierre et Marie Curie, (Paris 6), Institut Jean Le Rond d'Alembert, Spécialité Mécanique). Title: "*Control of sound radiation and transmission by means of passive piezoelectric networks: modelling, optimization and experimental implementations*"

2011 – Dr Roberto Paccapeli (Doctor of Philosophy in Theoretical and Applied Mechanics at Università di Roma La Sapienza and Université Pierre et Marie Curie, (Paris 6), Institut Jean Le

Rond d'Alembert, Spécialité Mécanique). Title: "*Control for mechanical system in smart structures: variational approaches for detecting damage*"

2013 – Dr Daniel Ahmad (Doctor of Philosophy at Doctoral School MEGA, Université de Lyon). Title: "*Analyse et simulation de film de la déformation de film polymères de décoration au cours de leur mise en form*"

2014 – Dr Antoine Rallu (Doctor of Philosophy at the Laboratoire Génie Civil et Bâtiment (L.G.C.B.) – ENTPE/INSA de Lyon, France). Title: "*Dynamique à basses et moyennes fréquences demilieux hétérogènes périodiques*"

2014 – Dr George Noel Djoufedie (Doctor of Philosophy in Ingegneria e Modellistica Fisico-Matematica at Università dell'Aquila, Italy). Title: "*Non-strictly hyperbolic systems of conservations laws arising in oil recovery*"

2015 – Dr Khaled El Nady (Doctor of Philosophy at the École Doctorale Mécanique et Energétique de l'Université de Lorraine, Nancy, France). Title: "*Nonlinear constitutive models for lattice materials by discrete homogenization methods at large strains. Application to membranes and textiles*"

2016 – Dr Julie AL-HOUT (Doctor of Philosophy at Doctoral School MEGA, INSA de Lyon). Title: "*Etudes Expérimentales et Numériques du comportement des structures en Pisé et en Maçonnerie : Apport de la MED*". [Convocation](#)

2016 – Dr Ba Tam TRUONG (Doctor of Philosophy at Doctoral School MEGA, INSA de Lyon). Title: "*Formulation, performances mécaniques, applications du matériau TRC pour le renforcement et réparation de structure en béton/et béton armé : Approches expérimentale et numérique*". [Convocation](#)

2017 – Dr Hilal Reda (Doctor of Philosophy at Ecole Doctorale EMMA, Université de Lorraine, Nancy, France). Title: "*Modeling and computation of the effective static and dynamic properties of network materials accounting for microstructural effects and large deformations*". [Convocation](#)

2017 – Dr Mojtaba Biglar (Doctor in Mechanical Engineering, Politechnika Rzeszowska, Poland). Title: "*Strain state in neighbourhood of defects in piezo-electric ceramic material*". [Invitation Letter](#)

2017 – Dr Anastasiya Vinakurava (Doctor in Mechanical Engineering, Politechnika Rzeszowska, Poland). Title: "*Modeling of bone and bioceramic materials for biomechanic analysis of the hip-implant considering micropolar plasticity*". [Invitation Letter](#)

2017 – Dr Hao Xiong (Doctor in Computational geomechanics, IRSTEA Grenoble, France). Title: "*Multiscale modeling of granular materials in application to geotechnical engineering problems*".

2017 – Dr Sergei Khakalo (Doctor in Computational mechanics, Aalto University School of Engineering, Finland). Title: "*Strain gradient continuum mechanics: simplified models, variational formulations and isogeometric analysis with applications*". [Invitation Letter](#)

2018 – Dr Sara Bucci (Doctor in Mechanical Engineering, Otto von Guericke University Magdeburg, Germany). [Invitation Letter](#)

2018 – Dr Antoine Wautier (Docteur in Sciences por l'Ingénieur: Mécanique, Physique, Micro et Nanoélectronique, Aix-Marseille Université, France). Title: "*Analyse micro-inertielle des instabilités mécaniques dans les milieux granulaires, application à l'érosion interne. [Micro-inertial analysis of mechanical instability in granular materials with application to internal erosion]*". [Convocation](#)

Other Memberships

2005 – Member of the Selection Committee for the assignment of a research fellowship of four years at the Dipartimento di Ingegneria Strutturale e Geotecnica, Università La Sapienza di Roma, sector ICAR /08 Scienza delle Costruzioni. Title: "*Strutture Intelligenti: Modellazione e metodi per il controllo della risposta e dello stato di integrità strutturale*". Candidate: Dr Luca Placidi

2006 – Member of the Selection Committee for the position of associate professor at the facoltà di INGEGNERIA, Università degli Studi di CATANIA, sector ICAR /08 Scienza delle Costruzioni

2009 – Member of the Selection Committee for the assignment of a fellowship of three months at Dipartimento di Ingegneria Strutturale e Geotecnica, Università La Sapienza di Roma. Title: "*Dinamica nonlineare di corpi continui soggetti a impatto*". Candidate: Dr Luca Placidi

2010 – Member of the Selection Committee for the assignment of a research fellowship of one year at the Dipartimento di Strutture dell'Università ROMA TRE, sectors MAT/07, FIS/01 and ICAR /08 Scienza delle Costruzioni. Title: "Controllo attivo e passivo di vibrazioni in elementi strutturali tramite reti piezoelettriche: modellazione, sintesi e sviluppo sperimentale".

Candidate: Dr Luca Placidi

2014 – Member of the Commission for the "Habilitation à diriger les Recherches" at Laboratoire des Sciences de l'Ingénieur de l'Informatique et de l'Imagerie (ICUBE), Strasbourg.

Candidate: Dr Daniel George

2014 – Member of the Selection Committee for the position of associate professor at the Dipartimento di Architettura, Università degli Studi di ROMA TRE, sector 08/B2 S.S.D. ICAR /08 Scienza delle Costruzioni

2014 – Member of the Commission for the "Habilitation à diriger les Recherches" at LGCIE, INSA-Lyon, Villeurbanne, Lyon. Candidate: Dr Angela Madeo

2016 – Member of the Commission for the "Habilitation à diriger les Recherches" at Université de Toulon, France. Candidate: Dr Luca Placidi

2016 – Member of the Commission for the selection of "Ricercatore Universitario con contratto di lavoro subordinato a tempo determinato" at Università degli Studi dell'Aquila, Italy.

2017 – Member of the Commission for the "Habilitation à diriger les Recherches" at Université Paris EST, Marne la Vallée, France. Candidate: Dr Nicolas Auffray. [Convocation](#)

2019 – Member of the Commission for the "Habilitation à diriger les Recherches" at Université Paris EST, France. Candidate: Dr Arthur Lebée. [Convocation](#)

Invited presentations

2021

113. Seminar at Warsaw University of Technology, Warsaw, Poland, October 26th, 2021. Title: *"Synthesis of metamaterials: new experimental and theoretical challenges"*.

112. [Seminar](#) Dipartimento di Strutture per l'Ingegneria e l'Architettura (DisT), Università degli Studi di Napoli Federico II, 05 novembre 2021, ore 10:30. Title: *"Piola transformations and contact interactions for Second Gradient Continua and some related remarks on history of mechanics"*.

111. [Invitation](#) to Colloque International sur la Mécanique du futur, Paris, 25 July 2021. Title: *"Mechanics in the French style "*.

2020

110. [E-Workshop](#) Advances in Elastodynamics of architected materials and biomaterials, Paris, 12-13 November 2020. Title: *"Micro-architecture synthesis for metamaterials "*.

109. APM Online Conference 2020, Moscow, June 21 – 26, 2020 Title: *"Towards the synthesis of complete second gradient architected metamaterials: Micro-to-macro approaches, numerical investigations, additive manufacturing, and experimental validation"*.

2019

108. [Seminar](#) to Università degli Studi di Padova, November 12, 2019. Title: *"Metamaterial design: a challenge in mathematical physics and engineering sciences "*.

107. [Invited speaker](#) to Road Infrastructure Reimagined: Workshop on Intelligent Infrastructure for Road Transportation, October 3-4, 2019, Washington, D.C, USA. Title: *"Introduction to Metamaterials "*.

106. [Keynote lecture](#) at the Conference on Mathematical Modelling in Biomedicine, 30 Sep-4 Oct, 2019, Moscow, Russia Title: *"A Diffusion Model for Stimulus Propagation in Remodeling Bone Tissues "*.

105. [Keynote lecture](#) at the 9th ECCOMAS Thematic Conference on Smart Structures and Materials (SMART 2019), 8-11 July, 2019, Paris, France. Title: *"Piezoelectromechanical structures: an example of multi physics metamaterial based on the concept of analogy"*.

104. [Plenary lecture](#) at the XLVII International Summer School – Conference Advanced problem in Mechanics, June 24-29, 2019, St. Petersburg, Russia. Title: *"Synthesis of metamaterials: the role of pantographic substructures"*.

103. [Plenary lecture](#) at the 770th Session of the Galin Scientific Seminar on Continuum Mechanics, IPMech RAS, Moscow, Russia, 7 June 2019. Title: "*Pantographic metamaterials: A possible solution for some relevant technological problems*".

102. [One seminar](#) at the Moscow State University, Russia, 15 February 2019. Title: "*Pantographic metamaterials: A possible solution for some relevant technological problems*". [Abstract](#)

101. one seminar at the Institute for Problems in Mechanics RAS, Russia, 15 February 2019. Title: "*Higher gradient continua: theoretical aspects and possible applications*". [Abstract](#)

100. one seminar at the Dipartimento di Fisica, Università degli studi di Napoli "Federico II", Complesso di Monte Sant'Angelo, 8 January 2019. Title: "*Metamateriali: una sfida per la matematica dalla fisica e l'ingegneria*". [Abstract](#)

2018

99. [one invited lecture](#) at the Department of Mechanics and Mathematics of Lomonosov Moscow State University, Russia, 30 October 2018. Title: "*Some cases of Unrecognized transmission of scientific knowledge: from antiquity to Gabrio Piola's Peridynamics and Generalised Continuum Theories*". [Photo](#)

98. one invited lecture at [GADeS Workshop](#), Università degli Studi di Cagliari, Italy, 21 September 2018. Title: "*Buckling modes in pantographic lattices*".

97. [one seminar](#) at Institute of Nonlinear Mechanics (University of Stuttgart, Germany), 04 July 2018. Title: "*Differential Geometry of Embedded Manifolds and Contact Actions in Generalized Continua*".

96. [one plenary lecture](#) at the 46th International Summer School "Advanced Problems in Mechanics", Peter the Great St. Petersburg Polytechnic University, June 25-30, 2018, St. Petersburg, Russia. Title: "*Description versus design: describing metamaterials and fabrics with continuum and/or discrete models*".

95. [one seminar](#) at Department of Mechanical Engineering (University of California, Berkeley, USA), 30 January 2018. Title: "'Data driven' or 'Theory driven'? An epistemological reflexion motivated by the need of designing exotic metamaterials'".

94. [one seminar](#) at Department of Mechanical Engineering (University of California, Berkeley, USA), 17 January 2018. Title: *"Some Cases of Unrecognized Transmission of Scientific Knowledge: From Antiquity to Gabrio Piola's Peridynamics and Generalized Continuum Theories"*.

2017

93. [two seminars](#) at IRSTEA (National Institute for Environmental Science and Research), 12 December 2017, Grenoble, France. Title1: *"Pilotage par les données" ou "pilotage par la théorie"? Une réflexion épistémologique motivée par le besoin d'inventer des métamatériaux aux propriétés exotiques"*. Title2: *"Data driven" or "Theory driven"? An epistemological reflexion motivated by the need of designing exotic metamaterials"*.

92. [one seminar](#) at Aalto University School of Engineering, Finland, 7 December 2017. Title: *"Data-driven" or "Theory-driven"? An epistemological reflexion motivated by the need of designing exotic metamaterials"*.

91. [one seminar](#) at Warsaw University of Technology, Poland, 28 November 2017. Title: *"Metamaterials Extremely Resistant And Resilient To Large Deformations: Applications To Engineering And Perspectives Opened By 3D Printing Prototyping"*.

90. [one seminar](#) at École Polytechnique, Université Paris Saclay, 9 February 2017, Paris, France. Title: *"A new problem of old: Synthesis of Metamaterials. Theory, Numerics and Experiments"*.

89. [one seminar](#) at LMT-Cachan, 19 January 2017, Cachan, France. Title: *"The design of metamaterials using generalised continua as mathematical models: numerics, experiments and theory"*.

2016

88. [one invited talk](#) at Technische Universität Berlin, 9 November 2016, Germany. Title: *"Generalised Continua and the design of meta materials: numerics, experiments and theory"*.

87. [one Keynote lecture](#) at the 11th International Conference on Mathematical Problems in Engineering, Aerospace and Sciences, ICNPAA 2016, Université de La Rochelle, July 5 – July 8, 2016, La Rochelle, France. Title: *"Pantographic lattice based metamaterials: Modelling, prototype experiments and possible engineering applications"*.

86. [one seminar](#) at GDRI GEOMECH Multi-Physics and Multiscale Couplings in Geo-environmental Mechanics, Université de La Rochelle, 20-22 June, 2016, La Rochelle, France. Title: *"Lagrangian discrete models for compact granular bodies : a method for describing the onset of force chains?"*.

85. [one Keynote lecture](#) at the International Conference EMERGING TRENDS IN APPLIED MATHEMATICS AND MECHANICS, ETAMM 2016, LAMPS, Université de Perpignan, May 30 – June 3, 2016, Perpignan, France. Title: "Pantographic lattices as an example of higher gradient continua: Heuristic vs rigorous homogenisation, macroscopic vs microscopic models, experimental and numerical examples of equilibrium and motion".

84. Short course on Metamaterials at the Alghero Summer School of the CNRS International Associate Laboratory Coss&Vita on "Elastic Metamaterials: From Theory to Applications", Facoltà di Architettura, Università di Sassari, 22 – 29 May 2016, Alghero, Italy.

83. [one plenary lecture](#) at the 44th International Summer School "Advanced Problems in Mechanics", Peter the Great St. Petersburg Polytechnic University, 27 June-02 July 2016, St. Petersburg, Russia. [Invited letter](#)

82. [one seminar](#) at School of Mathematics and Statistics, University of Glasgow, Scotland, UK, 23 March 2016. Title: "Large deformations of planar extensible beams and pantographic lattices: heuristic homogenization, experimental and numerical examples of equilibrium".

81. [one seminar](#) at Mathematical Institute, University of Oxford, England, UK, 3 March 2016. Title: "Non-linear continuum models for planar extensible beams and pantographic lattices of beams: Heuristic homogenization, experimental and numerical examples of equilibrium in large deformation". [Invited letter](#)

80. [one seminar](#) at European-Latin-American Conference of Theoretical and Applied Mechanics (ELACTAM-2016), University of Havana, Cuba, 22-24 February 2016. [Invited letter](#)

2015

79. [one seminar](#) at 53rd Meeting of the Society for Natural Philosophy, University of Calgary, Canada, 19-21 August 2015.

78. [one plenary lecture](#) at the International Summer School "Advanced Problems in Mechanics", Peter the Great St. Petersburg Polytechnic University, 22-27 June 2015, St. Petersburg, Russia. Title: "Microstructured n -th gradient continuum models and some applications".

77. [one seminar](#) at Graduate School for Micro-Macro-Interactions in Structured Media and Particle Systems – GRK 1554, organized by OTTO VON GUERICKE UNIVERSITY MAGDEBURG, 8-12 June 2015, Berlin (German). Title: "On Gradient Material."

76. [Minisymposia invited speaker](#) at INTERPORE, International Society for Porous Media, Padova University, Italy, 18-21 May 2015. Title: "Models from Generalised continuum mechanics for

porous media infused with mixtures of compressible fluids: theoretical methods and applications."

75. [one seminar](#) at Sciences et Techniques de L'Ingénieur STI, École Polytechnique Fédérale de Lausanne EPFL, Switzerland, 2 April 2015. Title: "Microstructured n -th gradient continuum models including piezoelectric elements and electric circuits and some applications to acoustics."

74. [one seminar](#) at MSME Biomécanique, Université Paris-Est, France, 3 March 2015. Title: "Higher gradient and micromorphic continuum models: applications to microscopically highly inhomogeneous composites and growing tissues."

73. [one seminar](#) at Laboratoire d'Énergétique et de Mécanique Théorique et Appliquée (LEMTA), Université de Lorraine, Nancy, France, 19 February 2015. Title: "Variational peridynamics and higher gradient continuum mechanics. Some applications to composite reinforcements."

72. *one seminar* at INSA de Lyon, France, 17 February 2015. Title: "The role of mathematical modeling in civil engineering and in particular in structural mechanics: why technological is impossible without scientific understanding."

71. [PhD course](#) held at Warsaw University of Technology, Warsaw, 19-31 January 2015. Title: "Generalized continuum models with application to smart Structures, composites and biomechanics."

2014

70. [one seminar](#) at WOKSHOP on Numerical methods for partial integro-differential equations modelling mechanical systems with nonlocal constitutive laws, ISTITUTO PER LE APPLICAZIONI DEL CALCOLO "MAURO PICONE" – Sede di Napoli, Italia, December 12, 2014. Title: "Mechanical and biological systems with nonlocal constitutive laws"

69. [one seminar](#) at Warsaw University of Technology, Faculty of Production Engineering, Warsaw, 27 October 2014. Title: "Tissue growth and reconstruction with optimized meta materials. New concepts and models"

68. [one seminar](#) at Ecole Centrale de Lyon, France, 4 December, 2014. Title: "PiezoElectroMechanical (PEM) structures: the concept of distributed control of vibrations via piezoelectric transduction and analog electric waveguides"

67. [one seminar](#) at IUTAM SYMPOSIUM 2014 Complexity of Nonlinear Waves, Tallinn, Estonia, 8-12 September, 2014. Title: "Variational methods for modelling non-linear effects in waves propagation in generalized continua"

66. [one seminar](#) at Dipartimento di Ingegneria civile, chimica e ambientale (DICCA), Università degli studi di Genova, Genova 7 July 2014. Title: "Verso la concezione e l'ottimizzazione di nuovi metamateriali: una sfida per le teorie meccaniche. Strutture Piezo-ElettroMeccaniche e Materiali di Secondo Gradiente"

65. [two seminars](#) at 17th U.S. National Congress on Theoretical and Applied Mechanics, Michigan State University, East Lansing, Michigan , June 15-20, 2014. Title1: "Modelling fibrous composite reinforcements by second gradient theory: shear strain boundary layers and edge internal actions". Title2: "Remarks on the 2014 Levi-Civita award for excellence in theoretical mechanics".

64. [a Keynote Presentation](#) at International Conference on Structural Nonlinear Dynamics and Diagnosis, 19-21 May, 2014, Agadir, Marocco. Title: "Piezoelectromechanical Structures: a new concept for vibration control"

63. [one seminar](#) at Warsaw University of Technology, Faculty of Production Engineering, Warsaw, 8 April 2014. Title: "Design and modelling of metamaterials: challenges from engineering sciences"

62. *one seminar at University Center in Ajdovscina, University of Nova Gorica, Slovenia, 28 February 2014. Title: "Research perspectives in design and applications of metamaterials, smart materials and structures to engineering problems"*

2013

61. [one seminar](#) at LEMTA Laboratoire d'Énergétique et de Mécanique Théorique e Appliquée, Université de Lorraine, Nancy (France), 14 November 2013. Title: "Higher gradient and Micromorphic continua: some applications to composites and growing tissues"

60. [Invited Lecture](#) at SES Medal Symposium in honor of D.J. Steigmann, 50th Annual Technical Meeting and ASME-AMD Annual Summer Meeting, Brown University School of Engineering, (PROVIDENCE, RI) , USA, 29 July 2013. Title : "Analytical Mechanics of Continua with Microstructure"

59. *Chairman of Mini-Symposium on "One dimensional models of beams, cables and beam-like structures" at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 26 July 2013*

58. [Presentation](#) of Professor Angelo Luongo, Plenary Lecture at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 25 July 2013. Title: "On the Use of the Multiple Scales Method in Solving Difficult Bifurcation Problems"

57. [one seminar](#) at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 25 July 2013. Title: "Generalized Poynting Effects in Predeformed Prismatic Bars"

56. [one seminar](#) at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 24 July 2013. Title : "How Contact Interactions May Depend on the Shape of Cauchy Cuts in n -th Gradient Continua: Approach "À La D'Alembert" "

55. Chairman of Mini-Symposium on "Nonlinear Elasticity" at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 23 July 2013

54. [one seminar](#) at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 23 July 2013. Title: "Large Deformations in Isotropic Second Gradient Solids: Some Numerical Simulations Describing the onset of Boundary Layers"

53. [one seminar](#) at Politecnico di Milano, Beltrami Room, organized by Prof. Umberto Perego, Department of Civil and Environmental Engineering, 25 June, 2013. Title: "Analytical Continuum Mechanics à la Hamilton-Piola: Least Action Principle For Second Gradient Continua and Capillary Fluids"

52. one seminar at laboratoire Imath, Université du Sud Toulon-Var, Toulon (France), 23 May 2013. Title : "Continuous Models for describing the complexity of growth phenomena in bone tissues reconstructed with bio-resorbable materials : how to account for microstructures ?"

51. one seminar at Laboratoire Modelisation et Simulation Multi Echelle (MSME UMR8208 CNRS), Université Paris Est (Marne-la-Vallée), France, 15 May 2013. Title : "Continuous Models for describing the complexity of growth phenomena in bone tissues reconstructed with bio-resorbable materials : how to account for microstructures?"

2012

50. *one seminar at Ecole Doctorale Sciences de la terre et des planètes solides (STP), INSA de Lyon, 18 October 2012. Title: "N-th Gradient continua: general theory and microscopic structures. Perspectives in wave propagation"*

49. *[invited plenary lecturer](#) at the 38th SOLID MECHANICS CONFERENCE, Warsaw University, 27-31 AUGUST 2012, Warsaw*

48. *[one seminar](#) über Fragen der Mechanik at EAM – Friedrich Alexander Universität, Erlangen, Nürnberg, 6 March 2012. Title: "How contact interactions may depend on the shape of Cauchy cuts in N-th gradient continua: approach "à la D'Alembert"*

47. *one seminar of Physical Mathematics at Università Sapienza di Roma, 1 February 2012. Title: "Strutture "micro" che producono comportamenti "macro" esotici: una introduzione ai continui generalizzati"*

46. *one seminar at Ecole Doctorale MEGA, INSA de Lyon, 25 January 2012. Title: "Continuum models for microscopically heterogeneous materials: applications to concrete and porous media"*

2011

45. *[one seminar](#) for the Workgroup Sistemi Complessi at the Dipartimento di Scienze Matematiche del Politecnico di Torino on 30 Novembre 2011. Title: "A continuum model for the bio-mechanical interactions between living tissue and bio-resorbable graft after bone reconstructive surgery"*

44. *[one seminar](#) at Fédération francilienne de mécanique matériaux, structure, procédés, Ecole des Mines de Paris, October 13th, 2011 Paris, France. Title: "The structure of contact actions in N-th gradientgeneralized continua : a generalization of the Cauchy tetrahedron argument"*

43. *one seminar at Symposium in honour of Gianpietro Del Piero, First Sperlonga Summer School on Mechanics and Engineering Sciences, Sperlonga (Italy), 26-30 September 2011. Title: "Contact actions in N-th gradient Continua"*

42. *[seminars](#) at 2nd International Conference on Material Modelling incorporating the 12th European Mechanics of Materials Conference , Ecole des Mines de Paris, August 31st-September 2nd, 2011 Paris, France.*

41. *[one seminar](#) at the Università degli Studi di Perugia for the Dottorato di Ricerca in Ingegneria Civile e Materiali Innovativi on 24 June 2011. Title: "Metodi Variazionali nella Meccanica del Continuo: Continui di ennesimo gradiente e applicazioni".*

40. [one seminar](#) at Workshop on Vibrational energy transport and dissipation, National Science Foundation & University of Rome Faculty of Engineering of La Sapienza, Roma 6-7 June 2011. Title: "Piezo-ElectroMechanical Structures"

39. four seminars at Università degli Studi di Napoli "FedericoII"- Polo delle Scienze e delle Tecnologie- Dipartimento di Matematica e Applicazioni "Renato Caccioppoli", Napoli 19 May 2011, 8-10 June 2011. Titles: "Continui di N-simo gradiente. I concetti di geometria differenziale e teoria delle distribuzioni necessari alla formulazione di modelli coerenti"

38. [one seminar](#) at Laboratoire IUSTI, Technopôle de Château-Gombert, Marseille 27 May 2011. Title: "Contact actions in N-th gradient Continua an application to wave propagation"

37. [one seminar](#) at Laboratoire Sols Solides Structures Risques, Université Joseph Fourier, Grenoble 31 march 2011. Title: "The variational approach in porous media"

36. [one lecture](#) at Incontro Scientifico per il settantesimo compleanno del Prof. Antonio Romano, Napoli 3 febbraio 2011

35. one lecture at the Dipartimento di Fisica Università di Tor Vergata, Roma 17 gennaio 2011. Titolo del seminario: " Principio dei Lavori Virtuali in Meccanica del Continuo"

2010

34. one seminar at the Università degli Studi di Catania for the Dottorato di Ricerca in Ingegneria Strutturale e Geotecnica on 18 November 2010. Title: "Stato di tensione nei continui di secondo gradiente. Applicazione ai sistemi continui 'microscopicamente' eterogenei"

33. two seminars at Sperlonga Summer School on Mechanics and Engineering Sciences, Sperlonga (Italy), 20-24 September 2010. Titles: "The Tetrahedon Argument for higher gradient theories" and "Flow in deformable porous media Boundary Conditions at Material properties discontinuity surfaces"

32. one invited lecture at the Coussy Memorial Symposium, EMI California USC Viterbi School of Engineering , 8-11 August 2010

2009

31. one seminar at ANLA Université de Toulon et du Var, July 2009. Title: "Piezoelectromechanical Structures: application to vibration damping"

2007

30. one presentation at the XXXI Convegno AMASES , Lecce Italy 3-6 settembre 2007

29. *one seminar at ANLA Université de Toulon et du Var, June 2007*

28. [*one seminar*](#) at 8e COLLOQUE NATIONAL EN CALCULUS DES STRUCTURES, 21-25 May 2007, Giens (Var). Title: "Poutres composites piézoélectriques : modélisation des effets 3D, validations numériques et expérimentales"

2003

27. [*one seminar*](#) at IUTAM Symposium on Physicochemical and Electromechanical Interactions in Porous Media, Eindhoven University of Technology Department of Biomedical Engineering, Congress Centre Rolduc, Kerkrade, The Netherlands 18-23 May 2003. Title: "A second gradient model for deformable porous matrices filled with an inviscid fluid"

26. *one seminar at the International Symposium on Applied Electromagnetics and Mechanics Versailles France 2003*

2002

25. one seminar at 34th Solid Mechanics Conference, Institute of Fundamental Technological Research Center of Mechanics and Information Technology and Committee of Mechanics of the Polish Academy of Sciences , Zakopane 2-7 September 2002

24. *one invited lecture at the Conference "Contemporary Research in Theoretical and Applied Mechanics", Virginia Polytechnic Institute and State University, Blacksburg 23-28 June 2002*

23. *one seminar at LMM Université Pierre et Marie Curie, Paris VI, June 2002*

2001

22. one seminar on Applied Electromagnetics and Mechanics at 10th International Symposium, Tokyo Japan 13-16 May 2001

21. *one seminar at the Conference in honour of Prof. K. Hutter's 60th birthday, Seeheim Germany 2001*

20. *six lectures on Smart Structures at the AMAS Center of Excellence, Warsaw 2001*

19. *one seminar on Net Control Systems at the Engineering School Leonard de Vinci (ESILV), Pole Universitaire Leonard de Vinci , Paris La Defense, September 2001*

1999

18. one seminar at DISAT Università dell'Aquila, March 1999

17. [*one seminar*](#) at Alenia Spazio S.p.A., stabilimento Globalstar, 1999-2000. Title: "Controllo di vibrazioni per mezzo di attuatori piezoelettrici"

1998

16. one seminar at the Department of Mechanics, Darmstadt University of Technology, February 1998

15. *one invited lecture at the Institute of Applied Mechanics (Civil Engineering) University of Stuttgart, February 1998*

14. [*one seminar*](#) at Alenia Spazio S.p.A., stabilimento Globalstar, 1998-99. Title: "Paralleli storici e formali fra la teoria del continuo deformabile e le equazioni di Maxwell: un'applicazione alla teoria della piezoelettricità per il progetto di strutture spaziali"

1997

13. one seminar on Piezoelectromechanical structures at Dipartimento di fisica Università di Napoli, March 1997

12. *one seminar at the Conference Free Boundary problems: Theory and Applications, Crete 1997*

11. *two seminars at the EUROMECH CONFERENCE n.366, ESSEN 1997*

10. [*one seminar*](#) at Alenia Spazio S.p.A., stabilimento Globalstar, 1997-98. Title: "La teoria del continuo deformabile e le equazioni di Maxwell: applicazioni della piezoelettricità allo smorzamento di vibrazioni in travi reticolari"

1996

9. [*one seminar*](#) at Alenia Spazio S.p.A., Salaria, 1996-97. Title: "Paralleli storici e formali fra la teoria del continuo deformabile e le equazioni di Maxwell: un'applicazione alla teoria della piezoelettricità per il progetto di strutture spaziali"

8. *two seminars at the Engineering Science and Mechanics Department Virginia TECH, February 1996*

1995

7. two seminars at the University of Rostock Institute for Mathematics, December 1995

6. *one seminar at Laboratoire d'Aérothermique du CNRS, GDR Fluides en Microgravité , Meudon, 25 September 1995*

1994

5. *[one seminar](#) at the CIRM – Centro Internazionale per la Ricerca Matematica, Trento (Italy), 7 December 1994. Title: "Internal capillarity: microscopic bubbles".*

4. *one seminar at LMM Université Pierre et Marie Curie, Paris VI, October 1994*

3. *one seminar at the 30th Polish Solid Mechanics Conference, Zakopane, 5-9 September 1994*

1991

2. *one seminar at the Vth International Meeting on Waves and Stability in Continuous Media, 1991*

1988

1. *two seminars at IPPT PAN, Warsaw June 1988*

International Conferences and Schools Organization

1. *13th International Symposium on "Applied Electromagnetics and Mechanics (ISEM)", September 9-12, 2007 Kellogg Center Michigan State University East Lansing, MI USA*

2. *Course CISM UDINE "Variational Models and Methods in Solid and Fluid Mechanics" Coordinators: Francesco dell'Isola (Rome, I), Sergey Gavriluk (Marseille, F) July 12-16 2010*

3. *[Scuola Estiva AIMETA](#) / Summer School of the Italian Association of Theoretical and Applied Mechanics in Sperlonga, 20-24 September 2010. "Anomalous Transport: from Billiards to Nanosystems" sponsored by Università di Roma La Sapienza CNR and Città di Sperlonga*

4. *[Symposium at International Research Center M&MoCS](#) on "Mechanics of Fractures and Second Gradient Theory", Cisterna di Latina, July 4-8 2011*

5. [First Sperlonga Summer School](#) on Mechanics and Engineering Sciences, Sperlonga (Italy), 26-30 September 2011. "Atomistic and continuum descriptions of microstructures"
6. [Workshop at International Research Center M&MoCS](#) on "Second Gradient and Generalized Continua". Coordinators: Francesco dell'Isola (Sapienza Università di Roma), Samuel Forest (Paris, F). Cisterna di Latina, March 12-16, 2012
7. [Second Sperlonga Summer School](#) on Mechanics and Engineering Sciences, Sperlonga (Italy), 24-28 September 2012. "Mechanics and Thermodynamics of Soft Active Matter"
8. [Member of International Scientific Committee](#) at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 23-26 July 2013.
9. [Member of Organizing Committee](#) at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 23-26 July 2013.
10. [Organizer of Minisymposium](#) "Nonlinear Elasticity" (Dedicated to Richard Toupin, in recognition of his outstanding contribution to Mechanics) at 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), McGill University (Montréal, Quebec), Canada, 23-26 July 2013.
11. [Third Sperlonga Summer School](#) on Mechanics and Engineering Sciences, Sperlonga (Italy), 23-27 September 2013. "Dynamics, Stability and Control of Flexible Structures"
12. [Organizer of Euromech-Colloquium 563](#) "Generalized Continua and their Application to the Design of Composites and Metamaterials", Cisterna di Latina (LT), (Italy), 17-21 March 2014.
13. [Member of Scientific Committee](#) at 4th International Conference on Material Modeling, University of California, Berkeley, May 27-29, 2015
14. [Member of Scientific Committee](#) at the International Conference EMERGING TRENDS IN APPLIED MATHEMATICS AND MECHANICS.
15. [Organizer of Workgroup](#) on "From adaptive and architecture materials to integrated smart structures: a challenge in mechanical engineering and biomechanical applications. Arpino (FR), (Italy), 16-18 April 2015.
16. [Organizer of Bilateral French-Italy Workshop](#) on "Going down to the microscale in multiphysics problems from seismic driven risks to petroleum geomechanics. Arpino (FR), (Italy), 4-6 May 2015.

17. [Organizer of Inaugural Summer School](#) of the CNRS International Associate Laboratory Coss&Vita on *Mechanics of generalized continua and their applications to engineering materials and structures*, Arpino (FR), (Italy), 20-26 July 2015
18. [Organizer of the Workshop](#) on *Computational Mechanics of Generalized Continua and Applications to Materials with Microstructure* of the CNRS International Associate Laboratory Coss&Vita, Scuola Superiore di Catania, 29 – 31 October, 2015, Catania.
19. [Organizer of the Alghero Summer School](#) of the CNRS International Associate Laboratory Coss&Vita on *"Elastic Metamaterials: From Theory to Applications"*, 22 – 29 May 2016, Alghero (Sardinia), Italy
20. [Organizer of the School](#) of the CNRS International Associate Laboratory Coss&Vita on *"Models of Generalized Continua characterized by Quasi-Inextensible Fibrous Structures: New Ideas for Models and Applications"*, 19-23 September 2016, Arpino, Italy
21. [Organizer of EUROMECH-Colloquium 579](#) on *"Generalized and microstructured continua: [new ideas in modeling] and/or [applications to structures with (nearly-)inextensible fibers]"*, 3-8 April 2017, Arpino, Italy
22. [Organizer of the Second Bilateral France-Italy Workshop](#) on *"Open issues and emerging approaches in geo-environmental mechanics"*, 2-4 May 2017, Arpino (FR), Italy
23. [Organizer of 5th International Conference](#) on *"Material Modelling"* (ICMM5), 13-16 June 2017, Rome, Italy
24. [Organizer of the France-Italy Workshop](#) on *"Bone biomechanics: multiscale and multiphysical aspects"*, 26-28 September 2017, Giuliano di Roma (FR), Italy
25. [Organizer of the Workshop](#) *"Encounter of the third kind"* on *"Generalized continua and microstructures"*, 3-7 April 2018, Arpino (FR), Italy
26. [Organizer of ICoNSoM 2019](#) International Conference on *"Nonlinear Solid Mechanics"*, 16-19 June 2019, Rome, Italy
27. [Organizer of Joint MEMOCS Workshop](#) on *"Models of Complex Materials and Systems"*, 20-23 June 2019, Arpino (FR), Italy

28. [SOURIAU COLLOQUIUM](#) 63ème Colloque International de Théories Variationnelles (CITV)
30 June- 5 July, 2019, Arpino, Italy

List of funded projects

2011

Ricerche UNIVERSITARIE, Università di Roma "La Sapienza" - prot. C26A11E383. Title of the research: Dynamical performances optimization of structural members and structures constituted by innovative materials. Scientific responsible: DELL'ISOLA Francesco

2010

Ricerche UNIVERSITARIE, Università di Roma "La Sapienza" - prot. C26A103Z2J. Title of the research: *Microstructures and networks in biology and structural mechanics.*
Scientific responsible: DELL'ISOLA Francesco

2009

Progetti di Ricerca di Università, Università di Roma "La Sapienza" - prot. C26A09PJNE. Title of the research: *Propagazione di onde in mezzi porosi con discontinuità: applicazione allo studio di fenomeni sismici ed all'individuazione di riserve di fluido.*
Scientific responsible: DELL'ISOLA Francesco

2006-2008

PRIN2005, Protocollo: 2005094847_003. Title: *Modellazione e controllo delle incertezze in strutture intelligenti: controllo.* Scientific responsible: DELL'ISOLA Francesco

2008

Progetti di Ricerca di Università, Università di Roma "La Sapienza"- prot. C26A08JW43. Title of the research: *Metodologie di attenuazione delle vibrazioni e del rumore per mezzo di attuatori piezoelettrici.* Scientific responsible: DELL'ISOLA Francesco

Publications

The starred publications are in Peer-reviewed Congress Proceedings, the others are in Peer-Reviewed Journals

2021

[228] Z. Vangelatos, M.E. Yildizdag, I. Giorgio, F. dell'Isola, C. Grigoropoulos "Investigating the mechanical response of microscale pantographic structures fabricated by multiphoton lithography" *Extreme Mechanics Letters*, 2021, vol. 43, 8 pages.

[227] V.A. Eremeyev, A. Cazzani, F. dell'Isola "On nonlinear dilatational strain gradient elasticity" *Continuum Mechanics and Thermodynamics*, 2021, 35 pages. [DOI: <https://doi.org/DOI: 10.1007/s00161-021-00993-6>].

[226] C. Boutin, F. dell'Isola "Green's functions and integral representation of generalized continua: the case of orthogonal pantographic lattices" *Zeitschrift für angewandte Mathematik und Physik*, 2021, vol. 72 (2), 26 pages. [DOI: <https://doi.org/DOI: 10.1007/s00033-021-01480-3>].

[225] I. Giorgio, V. Varano, F. dell'Isola, N.L. Rizzi "Two layers pantographs: a 2D continuum model accounting for the beams' offset and relative rotations as averages in SO (3) Lie groups", *International Journal of Solids and Structures*, 2021, vol. 216, pp. 43-58.

[224] E. Turco, E. Barchiesi, F. dell'Isola "A numerical investigation on impulse-induced nonlinear longitudinal waves in pantographic beams", *Mathematics and Mechanics of Solids*, 2021, 27 pages. [DOI: <https://doi.org/DOI: 10.1177/10812865211010877>].

[223] V.A. Eremeyev, F. dell'Isola "On weak solutions of the boundary value problem within linear dilatational strain gradient elasticity for polyhedral Lipschitz domains", *Mathematics and Mechanics of Solids*, 2021, 13 pages. [DOI: <https://doi.org/DOI: 10.1177/10812865211025576>].

[222] R. Darleux, B. Lossouarn, I. Giorgio, F. dell'Isola, J.F. Deü "Electrical analogs of curved beams and application to piezoelectric network damping", *Mathematics and Mechanics of Solids*, 2021, 24 pages. [DOI: <https://doi.org/10.1177/10812865211027622>].

[221] E. Barchiesi, F. dell'Isola and F. Hild "On the Validation of Homogenized Modeling for Bi-Pantographic Metamaterials via Digital Image Correlation", *International Journal of Solids and Structures*, 2021, vol. 208–209, pp. 49-62.

[220] F. Hild, A. Misra and F. dell'Isola "Multiscale DIC applied to Pantographic Structures", *Experimental Mechanics*, 2021, vol. 61, pp. 431-443 .

[219] U. Mühlich, B. E. Abali and F. dell'Isola "Commented translation of Erwin Schrödinger's paper 'On the dynamics of elastically coupled point systems' (Zur Dynamik elastisch gekoppelter Punktsysteme)", *Mathematics and Mechanics of Solids*, [first published online:

August 5, 2020], 2021, Vol 26, Issue 1, 16 pages. [DOI: <https://doi.org/10.1177/1081286520942955>].

[218] A. Misra, L. Placidi, F. dell'Isola and E. Barchiesi "Identification of a geometrically nonlinear micromorphic continuum via granular micromechanics", *Zeitschrift für angewandte Mathematik und Physik*, 2021, vol. 72 (4), 21 pages.

[217] P. Auger, T. Lavigne, B. Smaniotto, M. Spagnuolo, F. Dell'isola and F. Hild "Poynting Effects in Pantographic Metamaterial Captured via Multiscale DVC", *Journal of Strain Analysis for Engineering Design*, 2021, Volumes 208–209, pp. 49-62.

2020

[216] E. Barchiesi, F. dell'Isola, F. Hild and P. Seppecher "Two-dimensional continua capable of large elastic extension in two independent directions: asymptotic homogenization, numerical simulations and experimental evidence", *Mechanics Research Communications*, 2020, vol. 103, pp. 103466. [DOI: <https://doi.org/10.1016/j.mechrescom.2019.103466>].

[215] J. Chróscielewski, F. dell'Isola, V. A. Eremeyev and A. Sabik "On rotational instability within the nonlinear six-parameter shell theory", *International Journal of Solids and Structures*, 2020, volumes 196-197, pp. 179-189. [DOI: <https://doi.org/10.1016/j.ijsolstr.2020.04.030>]

[214] F. Hild, A. Misra and F. dell'Isola "Multiscale DIC applied to Pantographic Structures", *Experimental Mechanics*, 2020, 33 pages.

[213] A. Della Corte and F. dell'Isola "Direct Method of Calculus of Variations in Elasticity", *Encyclopedia of Continuum Mechanics*, 2020, PP. 629-635. [DOI: https://doi.org/10.1007/978-3-662-55771-6_174]

[212] F. dell'Isola, P. Seppecher and A. Della Corte "Higher Gradient Theories and Their Foundations", *Encyclopedia of Continuum Mechanics*, 2020, PP. 1090-1099. [DOI: https://doi.org/10.1007/978-3-662-55771-6_151]

[211] E. Barchiesi, S. R. Eugster, F. dell'isola and F. Hild "Large in-plane elastic deformations of bi-pantographic fabrics: asymptotic homogenization and experimental validation", *Mathematics and Mechanics of Solids*, 2020, vol. 25 (3), pp. 739-767 . [DOI: <https://doi.org/10.1177/1081286519891228>].

[210] F. dell'Isola and D. J. Steigmann "Discrete and Continuum Models for Complex Metamaterials", *Cambridge University Press*, 2020. [DOI: <https://doi.org/10.1017/9781316104262>]. [BOOK]

[209] E. Turco, E. Barchiesi, I. Giorgio and F. dell'Isola "A Lagrangian Hencky-type non-linear model suitable for metamaterials design of shearable and extensible slender deformable bodies alternative to Timoshenko theory", *International Journal of Non-Linear Mechanics*, 2020, vol. 123, pp. 103481 (19 pages). [DOI: <https://doi.org/10.1016/j.ijnonlinmec.2020.103481>].

[208] M. Spagnuolo, P. Franciosi and F. dell'Isola "A Green operator-based elastic modeling for two-phase pantographic-inspired bi-continuous materials", *International Journal of Solids and Structures*, 2020, vol. 188-189, pp. 282-308. [DOI: <https://doi.org/10.1016/j.ijsolstr.2019.10.018>].

[207] J. Schulte, M. Dittmann, S. R. Eugster, S. Hesch, T. Reinicke, F. dell'Isola and C. Hesch "Isogeometric analysis of fiber reinforced composites using Kirchhoff–Love shell elements", *Computer Methods in Applied Mechanics and Engineering*, 2020, vol. 362, pp. 112845 (34 pages). [DOI: <https://doi.org/10.1016/j.cma.2020.112845>].

[206] I. Giorgio, F. dell'Isola and A. Misra "Chirality in 2D Cosserat Media Related to Stretch-Micro-rotation coupling with links to Granular Micromechanics", *International Journal of Solids and Structures*, 2020, vol. 202, pp. 28-38. [DOI: <https://doi.org/10.1016/j.ijsolstr.2020.06.005>].

[205] U. Mühlich, B. E. Abali and F. dell'Isola "Commented translation of Erwin Schrödinger's paper 'On the dynamics of elastically coupled point systems' (Zur Dynamik elastisch gekoppelter Punktsysteme)", *Mathematics and Mechanics of Solids*, first published online: August 5, 2020, 16 pages. [DOI: <https://doi.org/10.1177/1081286520942955>].

[204] M. E. Yildizdag, E. Barchiesi and F. dell'Isola "Three-point bending test of pantographic blocks: numerical and experimental investigation", *Mathematics and Mechanics of Solids*, first published online: May 4, 2020, 14 pages. [DOI: <https://doi.org/10.1177/1081286520916911>].

[203] E. F. Grekova, A. V. Porubov and F. dell'Isola "Reduced linear constrained elastic and viscoelastic homogeneous Cosserat media as acoustic metamaterials", *Symmetry*, 2020, vol. 12 (4), 22 pages.

[202] L. Placidi, F. dell'Isola and E. Barchiesi "Heuristic homogenization of Euler and pantographic beams", *Mechanics of Fibrous Materials and Applications – Part of the CISM International Centre for Mechanical Sciences book series (CISM, volume 596)*, 2020, pp.123-155. [FIRST ONLINE: 28 July 2019]

[201] I. A. Volkov, L. A. Igumnov, F. dell'Isola, S. Y. Litvinchuk and V. A. Eremeyev "A continual model of a damaged medium used for analyzing fatigue life of polycrystalline structural alloys under thermal-mechanical loading", *Continuum Mechanics and Thermodynamics*, 2020, vol. 32 (1), pp. 229-245. [DOI: <https://doi.org/10.1007/s00161-019-00795-x>]. [FIRST ONLINE: 05 June 2019].

2019

[200] V. A. Eremeyev, F. S. Alzahrani, A. Cazzani, F. dell'Isola, T. Hayat, E. Turco and V. Konopińska-Zmysłowska "On existence and uniqueness of weak solutions for linear pantographic beam lattices models", *Continuum Mechanics and Thermodynamics*, 2019, vol. 31 (6), pp. 1843-1861.

[199] M. Ferretti, G. Piccardo, F. dell'Isola and A. Luongo "Dynamics of taut strings undergoing large changes of tension caused by a force-driven traveling mass", *Journal of Sound and Vibration*, 2019, vol. 458, pp. 320-333.

[198] E. Barchiesi, A. Bouterf, F. Hild, F. Dell'Isola, A. Misra, J. Neggers, M. Pawlikowski, M. Spagnuolo and E. Turco "On the use of FE-based DIC to measure the kinematics of metamaterials at different scales", *Conference "Joint MEMOCS Workshop on Models of Complex Materials and Systems"*, 2019.

[197] F. dell'Isola, I. Giorgio, L. Placidi, M. Spagnuolo, P. Peyre, C. Dupuy, J. Dirrenberger, M. Pawlikowski and L. Igumnov "PANTOGRAPHIC METAMATERIALS: A VIEW TOWARDS APPLICATIONS", *Materials Physics and Mechanics*, 2019, vol. 19, pp. 637-645.

[196] M. E. Yildizdag, C. A. Tran, E. Barchiesi, M. Spagnuolo, F. dell'Isola and F. Hild "A Multi-disciplinary Approach for Mechanical Metamaterial Synthesis: A Hierarchical Modular Multiscale Cellular Structure Paradigm", *State of the Art and Future Trends in Material Modeling*, 2019, pp. 485-505

[195] B. E. Abali, H. Altenbach, F. dell'Isola, V. A. Eremeyev and A. Öchsner "New Achievements in Continuum Mechanics and Thermodynamics: A Tribute to Wolfgang H. Müller", *Springer* vol. 108, 2019

[194] F. dell'Isola, A. Della Corte, a, Battista and E. Barchiesi "Extensible beam models in large deformation under distributed loading: A numerical study on multiplicity of solutions", *Higher Gradient Materials and Related Generalized Continua*, FIRST ONLINE: 5 November 2019, pp. 19-41.

[193] A. Bersani, F. dell'Isola and P. Seppecher "Lagrange multipliers in infinite dimensional spaces, examples of application", *Encyclopedia of Continuum Mechanics*, 2019, 10 pages.

[192] F. dell'Isola, E. Turco, A. Misra, Z. Vangelatos, C. Grigoropoulos, V. Melissinaki and M. Farsari "Force-displacement relationship in micro-metric pantographs: Experiments and numerical simulations", *Comptes Rendus Mécanique*, 2019, vol. 347 (5), pp. 397-405. [DOI: <https://doi.org/10.1016/j.crme.2019.03.015>].

[191] S. Eugster, F. dell'Isola and D. Steigmann "Continuum theory for mechanical metamaterials with a cubic lattice substructure", *Mathematics and Mechanics of Complex Systems*, 2019, vol. 7 (1), pp. 75-98. [DOI: [dx.doi.org/10.2140/memocs.2019.7.75](https://doi.org/10.2140/memocs.2019.7.75)].

[190] E. Turco, F. dell'Isola and A. Misra "A nonlinear Lagrangian particle model for grains assemblies including grain relative rotations", *International Journal for Numerical and Analytical Methods in Geomechanics (Special Issue: Special Issue on Particle Methods in Geomechanics)*, 2019, vol. 43 (5), pp. 1051-1079. [DOI: [10.1002/nag.2915](https://doi.org/10.1002/nag.2915)].

[189] A. Della Corte, A. Battista, F. dell'Isola and P. Seppecher "Large deformations of Timoshenko and Euler beams under distributed load", *ZAMP - Zeitschrift für angewandte Mathematik und Physik*, 2019, 70:52, 19 pages.

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