

# Curriculum vitae of Luca Placidi

Luca Placidi

INTERNATIOANL TELEMATIC UNIVERSITY UNINETTUNO

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## Short curriculum (10000 characters)

I graduated in Physics at the University of Naples Federico II with the score of 110/110 cum laude in 2001 with Prof. Antonio Romano on the theory of linear and nonlinear elasticity. I obtained a second degree in Engineering with Prof. R. Batra at the Department of Engineering Science Mechanics in 2002 at Virginia Tech on the Saint-Venant problem.

I took the first PhD in 2004 at the Technical University of Darmstadt working with Prof. K. Hutter on the mechanics of polycrystalline materials and the second PhD in 2006 at the University of Rome La Sapienza, working with Prof. F. dell'Isola on the mechanics of mixtures.

From 2005 to 2009, I have been the holder of a research fellowship at the Department of Structural and Geotechnical Engineering of the University La Sapienza of Rome. After having received a scholarship at the same department, from February 2010, I have been the holder of a one-year Research Fellowship at the Department of Structures of the University of Rome "Roma Tre". The subject of the two research grants was the study of piezoelectromechanical structures with scientific directors Prof. F. dell'Isola and Prof. N. Rizzi, respectively. The argument of the scholarship was the nonlinear dynamics of structures subjected to monolateral constraints and the work was carried out with Prof. U. Andreaus.

I am the author of 175 publications: 73 papers, 1 review and 3 abstracts for journals; 13 contributions in volumes, 1 preface, 1 short introduction, 6 entries for the Encyclopedia of Continuum Mechanics and 2 translations in volumes; 10 works and 58 abstracts for conference; 6 books (2 master theses, 2 PhD theses, 1 didactic volume with exercises of Structural Mechanics and 1 translation); 1 curatorship.

Participation of many international workshops, of many (some as a teacher) schools and post-graduate training, of 1 formative stage in the materials testing laboratory at the University of L'Aquila and I was the organizer of 1 international workshop (Paris, 2016). In addition, I have been involved several times in periods of study abroad: in 2005 at the Low Temperature Institute University (Hokkaido) of Sapporo in Japan working with Prof. R. Greve. In 2007 at the Poly Technical University of New York (USA) working with Prof. M. Porfiri. In 2007 and in 2015 at the Institut de Mathématiques de Toulon et du Var working with Prof. P. Seppecher. The last visit was financed by an erasmus program. In 2015 two times at the Université Paris-Est Créteil Val de Marne working with prof. G. Rosi. This last 2 missions were financed by CNRS International Associate Laboratory Coss&Vita and the project was specifically devoted to this visit. In 2016 at the Laboratoire de Géologie (Ecole normale supérieure) working with Prof. Jérôme Fortin.

Between the Italian and abroad experiences, I have taught in many courses in subjects related to mechanics and structural mechanics. One of these courses was videotaped and posted on the website of the School of Excellence Tullio Levi-Civita.

In May 2011, I became Assistant Professor (Ricercatore) and in June 2019 Associate Professor at the International Telematic University Uninettuno. In 2014 I got the habilitation to become Associate (in 2020 that of Full) Professor in Mathematical Physics in Italy. In 2016 I got the habilitation (HDR) to become Professor in Mechanics in French. In 2018 I got the habilitation to become Associate (in 2020 that of Full) Professor in Structural Mechanics in Italy.

Relator of 91 dissertations (of which, 28 Master of Science) after 2011

I was involved in 21 financed research projects as a participant and in further 6 research projects with the scientific responsibility.

In particular, it is worth to be noted the participation of 15 financed projects (Ricerca di Ateneo or Progetti di Ricerca di Università or Ricerca dell'Ateneo Federato della Scienza e della Tecnologia AST or Ricerche universitarie, Università di Roma "La Sapienza") between 2002 and 2011 on those subjects related to the mechanics of solid-fluid mixtures and porous media with generalized continua, on the mechanics of biologic materials and on damage mechanics.

Besides, I participated to the following two PRIN projects

Years: 2006-2008. PRIN2005, Modellazione e controllo delle incertezze in strutture intelligenti: controllo.

Years: 2011-2013. PRIN 2009 Tessuti Biologici e Materiali Soffici Attivi: Modelli Matematici e Problemi.

I also participated at the following European projects

Years 2015-2018: LPEB. Financed by the program Erasmus+ Capacity building in Higher Education

Years 2019-2021: 3D printing in VET. Financed by the program Erasmus+

Year 2020: NET - ScieNcE Together. European research night with a talk for the Italian national TV Raiplay

Years 2020-2022: Destinazione Comune. Fondo Asilo, Migrazione e Integrazione (FAMI).

The list of those main research projects I had the scientific responsibility is the following

Years: 2014-2018. Effetti della caduta massi su costruzioni e infrastrutture civili e industriali. The grant was financed by Politecnico di Torino based on a grant of the Valle d'Aosta Region.

Year 2015 (and Year 2016): Derivation of the equations of motion of an implant-bone interphase. CNRS International Associate Laboratory Coss&Vita (with Giuseppe Rosi). Grant €2500 (and €2000).

Years 2018-2019: AI4BS – POR FESR LAZIO – AVVISO BIOEDILIZIA E SMART BUILDING. The grant has been equal to €13626.83+iva.

Years 2018-2021: Modellazioni analitiche del degrado for the RESBA project (from Politecnico di Torino). The grant is €13360.66 +iva.

I am reviewer for the following journals

Research in Nondestructive Evaluation. Phisica D. ZAMM e Entropy. Continuum mechanics and thermodynamics, Journal of Glaciology and Mathematical review. Archive of Applied Mechanics, Meccanica, Mathematics and Mechanics of Solids, Computers in Biology and Medicine, Mathematics and Mechanics of Complex Systems. Nonlinear Dynamics. Acta Mechanica, Biomechanics and Modeling in Mechanobiology, European Journal of Environmental and Civil Engineering. Control of Nonlinear Systems, Journal of Engineering Mathematics, Journal of Computational, Nonlinear Dynamics, The Open Construction & Building Technology Journal and International Journal of Thermophysics. Advances in Mechanical engineering, The Journal of the Acoustical Society of America, Applied Mathematical Modeling (APM), Computational Materials

Science, Journal of Applied Mechanics, Proceedings of the Royal Society A (Mathematical, physical and engineering sciences), Microelectronic Engineering (MEE), Mathematical Problems in Engineering, Journal of Intelligent Material Systems and Structures (JIM) and International Journal of Non-Linear Mechanics (NLM). Materials and Design, International Journal of Mechanical Sciences. Mathematical and Computational Applications, Journal of Packaging Technology and Research, Journal of Mechanical Engineering Science (JMES), Physica Status Solidi B: Basic Solid State Physics Journal of Elasticity, International Journal of Disaster Risk Science and Journal of Composite materials, Techno-press, Ultramicroscopy, Mathematics and Computers in Simulations (MATCOM), High Temperature Materials and Processes, Scientific reports. Journal of Structural Stability and Dynamics

I was an editor of the following special issues

Mathematics and Mechanics of Solids in 2016, vol. 21, p. 3-5, ISSN: 1081-2865, doi: 10.1177/1081286515588690

Mechanics Research Communications (MRC) in 2017 and with professors Anil Misra and Takashi Matsushima a special issue titled “Granular Material Models across Scales”

I am an editor of the following journals

Nanomechanics Science and Technology: An International Journal  
Vestnik of Tomsk State University of Architecture and Building  
BMC Mechanical Engineering  
Continuum Mechanics and thermodynamics  
The Russian Automobile and Highway Industry Journal

2016-2020 and 2020-2024: I am the coordinator of the first deliberative committee “Control and Representation” of the International research center “Mathematics and Mechanics Of Complex Systems” (M&MOCS).

I am the coordinator of those researchers of the International Telematic University Uninettuno that are affiliated to the International research center “Mathematics and Mechanics Of Complex Systems” (M&MOCS)

Member of the Scientific Committee of the EUROMECH-Colloquium 579 on Generalized and microstructured continua

I am a member of the Doctoral School in Mathematics and models of the University of L’Aquila.

I am an Independent External Experts reviewer for COST, European Cooperation in Science and Technology.

I am the coordinator of the Elasto-Dynamics of Microstructured Media (ELADYN) group International Research Project (IRP) Coss&Vita

Bibliometric indicators related to publications and citations: Bibliometrics Scopus (AU-ID: 57199322424): 94 papers, 3690 citations from 1341 documents, h-index 36.

Bibliometrics ISI : 65 publications, 1680 total citations (1449 without self-citations), citing articles 684 (631 without self-citations ) h-index 27.



In 2020 I was in the World's Top 2% Scientists by Stanford University: in the field Mechanical Engineering & Transports: I was 739<sup>th</sup> (24<sup>th</sup> among those researchers belonging to Italian institutions) among 92645 for career achievement and 183<sup>th</sup> (4<sup>th</sup> among those researchers belonging to Italian institutions) for 2019-achievements.

## Short curriculum (4000 characters)

I graduated in Physics at the University of Naples Federico II with the score of 110/110 cum laude in 2001 with Prof. A. Romano. I obtained a second degree in Engineering with Prof. R. Batra at the Department of Engineering Science Mechanics in 2002 at Virginia Tech.

I took the first PhD in 2004 at the Technical University of Darmstadt with Prof. K. Hutter and the second PhD in 2006 at the University of Rome La Sapienza with Prof. F. dell'Isola.

From 2005 to 2009, I have been the holder of a research fellowship at the Department of Structural and Geotechnical Engineering of the University La Sapienza of Rome with Prof. F. dell'Isola. After having received a scholarship with Prof. U. Andreaus at the same department, from February 2010, I have been the holder of a one-year Research Fellowship at the Department of Structures of the University of Rome "Roma Tre" with Prof. N. Rizzi.

I am the author of 175 publications: 73 papers, 1 review and 3 abstracts for journals; 13 contributions in volumes, 1 preface, 1 short introduction, 6 entries for the Encyclopedia of Continuum Mechanics and 2 translations in volumes; 10 works and 58 abstracts for conference; 6 books (2 master theses, 2 PhD theses, 1 didactic volume with exercises of Structural Mechanics and 1 translation); 1 curatorship.

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## Short curriculum (2000 characters)

I graduated in Physics at the University of Naples Federico II (110/110 cum laude) in 2001 with Prof. A. Romano. Second degree in Engineering with Prof. R. Batra at the Virginia Polytechnic Institute and State University in 2002. I took the first PhD in 2004 at the Technical University of Darmstadt with Prof. K. Hutter and the second PhD in 2006 at the University of Rome La Sapienza, with Prof. F. dell'Isola. From 2005 to 2011, I was the holder of 5-years Research Fellowship and of one scholarship at the Department of Structural and Geotechnical Engineering of the University La Sapienza of Rome and at the Department of Structures of the University of Roma Tre. I am the author of 174 publications: 73 papers for journals, 4 abstract or review for journals, 12 contributions in volumes, 2 brief introduction, 6 entries for the Encyclopedia, 3 translations in a volume or of books, 10 works for conferences, 58 abstracts for conferences, 6 books or curatorships. I have a wide international experience with the participation and organization of international work-shops and of schools and post-graduate training and I was involved periods of study abroad. I participated of 1 formative stage in the materials testing laboratory at the University of L'Aquila. I have taught in many courses in subjects related to mechanics of structures. In May 2011, I am assistant professor (ricercatore) and since June 2019 I am Associate professor at the International Telematic University Uninettuno. From 2014, I got the italian and French habilitations for associate and full professorship. Bibliometric indicators related to publications and citations: Bibliometrics Scopus (AU-ID: 57199322424): 94 papers, 3690 citations from 1341 documents, h-index 36. Bibliometrics ISI : 65 publications, 1680 total citations (1449 without self-citations), citing articles 684 (631 without self-citations ) h-index 27. In 2020 I am in the World's Top 2% Scientists by Stanford University.

# Curriculum vitae: chronological order



1995

I was graduated from *the scientific High School Taletè* of Rome.

I have enrolled at the Faculty of Engineering, University of Rome *La Sapienza*.

1996

I won a scholarship at the *Dipartimento di Energetica*, a department belonging from the Engineering Faculty of the University of Rome *La Sapienza*.

1997

I won another scholarship from ADISU, University of Rome *La Sapienza*.

2001

Degree in Physics from the University of Naples *Federico II* (with a score of 110/110 cum laude), working with Prof. A. Romano on a thesis entitled *On some applications of linear elasticity and nonlinear*.

2000 & 2002

Master of Science in Mechanical Engineering (Engineering Science and Mechanics [ESM] department) of the *Virginia Polytechnic Institute and State University*, working with Prof. R. Batra on a thesis entitled *Solution of Saint-Venant Problem and Almansi-Michell*.

Hyperlink to the thesis: <http://scholar.lib.vt.edu/theses/available/etd-10212002-043618/>

Both in 2000 and in 2002 Luca Placidi received a salary for his work as a Teaching Assistant for the courses, respectively, *Dynamics* and *Structural Mechanics* at *Virginia Polytechnic Institute and State University*. (Two courses).

2003

Conference *Milestones in Physical Glaciology (From the Pioneers to a modern science)*, in Zurich, see the list of publications.

I attended the 7<sup>th</sup> *International Symposium on Antarctic Glaciology* at Milano, by presenting a paper that was published in 2005, see the list of publications

Darmstadt Technische Universität paid the participation costs of both conferences.

I attended at two post-lauream courses:

- “Moving discontinuities in crystalline solids” at CISM (International Centre for Mechanical Sciences) in Udine

- Mathematical physics summer school in Ravello

Darmstadt Technische Universität paid the participation cost of the post-lauream course at CISM. Gruppo Nazionale di Fisica Matematica (National group of mathematical physics) paid the participation cost of the summer school in Ravello.

I participated at the following research project:

Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A039125.

Title of the research: Modellazione dei fenomeni di dilatazione in matrici solide sature di fluido per mezzo di teorie con micro-struttura. Scientific responsible: DELL'ISOLA Francesco

## 2004

Prof. K. Hutter presents a work. I am an author of such a work, at the symposium *Tectonics on Human Time Scales* titled: "Polycrystal Creep of Polar Ice and the Reconstruction of the Climate from Ice Core Isotope Analyses".

I attended the international conference IUTAM04 in Warsaw, Poland, presenting a paper. See the list of publications.

Darmstadt Technische Universität paid the participation cost.

I attended the international conference STAMM04, at Seeheim, in Germany, presenting a work. The work was published at the Proceedings of the conference, see the list of publications.

I participate in the following research project:

Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A045073. Title of the research: Analisi di stabilità di cavità saline basata su diversi modelli di mezzo poroso. Scientific responsible: DELL'ISOLA Francesco

I attended the following two post-lauream courses:

- "Applied Micromechanics of Porous Materials" at CISM (International Centre for Mechanical Sciences) of Udine.
- "Surface Waves in Geomechanics: Direct and Inverse Modeling for Soils and Rocks" at CISM (International Centre for Mechanical Sciences) of Udine.

The participation cost was paid by the doctoral school of "Meccanica teorica e applicata" of the "Dipartimento di Ingegneria Meccanica e Aeronautica" of the University of Roma "La Sapienza"

## 2004 & 2006

PhD in Mechanik, with distinction, with a thesis titled *Thermodynamically Consistent Formulation of Induced Anisotropy in Polar Ice Accounting for Grain Rotation, Grain-size Evolution and Recrystallization* with the supervisor prof. K. Hutter. PhD at the Mechanic department of the Technische Universität Darmstadt the 17/11/2004. The hyperlink of the thesis: <http://tuprints.ulb.tu-darmstadt.de/epda/000614/>

During the period of cooperation with Prof. K. Hutter at the Technische Universität Darmstadt between 2002 and 2004, I have perceived a scholarship from the university.

PhD in Theoretical and Applied Mechanics with a thesis entitled *Microstructured Continua treated by Theory of Mixtures* with advisor Prof. dell'Isola and at the Department of Mechanical Engineering and Aeronautics University La Sapienza in Rome on 13/02/2006.

## 2004-2008

Collaboration in teaching with Prof. F. dell'Isola for the course of *Scienza delle Costruzioni* (Structural mechanics) of the Bachelor of environment and territory engineering. (4 courses).

## 2005

I was a guest for a month at the *Low Temperature Institute* University (Hokkaido) Sapporo, Japan, working with Prof. R. Greve on the continuation of a work that was published in 2006 in the international journal ZAMP. The work was later published by the journal CMT in 2010. In this month, I received a salary from the Low Temperature Institute.

I have been invited to present at the *Workshop on Continuous Diversity, Complex Mixtures and Applications* at the Max Planck Institute for Mathematics in the Sciences of Leipzig (Germany). The abstract of the paper has been published in the book of abstract, see the list of publications.

Participation in the international conference BMAT 2005 in Warsaw, Poland.

I participate in the following research project: Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A050779. Title of the research: Modelli generalizzati di consolidamento nell'ambito di teorie poromeccaniche di secondo gradiente. Scientific responsible: dell'Isola Francesco

Participation in the international conference WASCOM 05 in Catania, presenting a work. The work was published in the proceedings of the conference, see the list of publications. The cost of attending the conference was reimbursed in part by the Department of Structural and Geotechnical Engineering of Sapienza University of Rome, and in part by the same organization of the conference.

Participation in the national conference AIMETA 05 in Florence, presenting a work. The abstract was published in the book of abstracts, see the list of publications. Department of Structural and Geotechnical Engineering of Sapienza University of Rome have reimbursed the cost of attending the conference.

Participation in a course of post-graduate training:

- “Dynamic Methods for Damage Detection in Structures” at CISM (International Centre for Mechanical Sciences), Udine.

Department of Structural and Geotechnical Engineering of “La Sapienza” University of Rome reimbursed the cost of attending the school.

## 2005-2007

I was the tutor of the course of *Scienza delle Costruzioni* (Structural mechanics) for Aeronautical Engineering with professors Andreaus, and Nardinocchi. For this collaboration, I received remuneration (4 courses: two in the academic year 2005-2006 and two in 2006-2007).

## 2005-2008

I won an external contract for the assignment of the courses *Aspetti strutturali dell'Ingegneria Civile e Ambientale* (Structural Aspects of Civil and Environmental Engineering) e *Laboratorio di*

Aspetti strutturali (Laboratory of Structural Aspects) for the graduate program of Environment Engineering for Sustainable Development. For this collaboration, I received remuneration. The course Laboratory of Structural Aspects was not opened for the academic year 2006-2007 (5 courses: two in the academic year 2005-2006, the one in 2006-2007 and two in 2007-2008).

## 2005-2009

Holder of Research Fellowship (for grouping ICAR / 08 Structural mechanics [Scienza delle Costruzioni]) at the Department of Structural and Geotechnical Engineering from 2005 to 2009 entitled: Smart Structures: Modeling and control methods of the response and the role of structural integrity (*Strutture Intelligenti: Modellazione e metodi per il controllo della risposta e dello stato di integrità strutturale*). Scientific responsibility: prof. F. dell'Isola.

Collaboration in teaching with Prof M. Pignataro for courses Scienza delle Costruzioni (Construction Science) for the degree courses in Chemistry and Energetic Engineering. (8 courses, two for each of the 4 academic years 2005-2006, 2006-2007, 2007-2008 and 2008-2009)

## 2006

Participation in a post-lauream course:

- Mathematical physics summer school of Ravello

The Gruppo Nazionale di Fisica Matematica (National Group of Mathematical Physics) reimbursed the expenses for the Summer School of Ravello.

I participate in the following research project: Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A06KXX. Title of the research: Modelli di continui porosi: teoria poromeccanica di secondo gradiente per lo studio dei fenomeni di consolidazione. Scientific responsible: F. dell'Isola.

## 2006-2008

I participate in the following research project: PRIN2005, Protocollo: 2005094847\_003. Title: Modellazione e controllo delle incertezze in strutture intelligenti: controllo. Scientific coordinator: Sestieri Aldo. Scientific responsible: dell'Isola Francesco.

## 2007

I was invited and participated (presenting a paper) in the workshop PICR-2 at the *Low Temperature Institute* of the University (Hokkaido) in Sapporo. The abstract of the work has been published in the book of abstracts, see the list of publications.

Moreover, in the Proceedings of the conference I publish another paper in 2009.

University of Sapporo reimbursed the costs for the conference and for a period of study following the conference (15 days).

I hold two courses (*Statics & Dynamics*) in the summer session of the academic year 2007 as adjoint professor at the Polytechnic Poly New York (USA). For this collaboration, Luca Placidi has received remuneration. (Two courses).

I was a guest at the Institut de mathématiques de Toulon et du Var of Prof. Pierre Seppecher for a period of research lasting three weeks. The subject of the study was the derivation of the equations of motion of a solid-fluid mixture through a variational principle. The costs for this period have

been taken by the funds of Prof. dell'Isola at the Department of Structural and Geotechnical Engineering of "La Sapienza" University of Rome.

Correlator of the following thesis at the University of Rome "La Sapienza"

Candidate: Filippo Cellini

Title: Analisi Dinamica di una trave con vincolo monolatero

Correlator of the thesis at the University of Rome "La Sapienza" of the candidate Steven Ports

I participated in the following research project: Progetti di Ricerca di Università, Università di Roma "La Sapienza" - Prot. C26A07TELB. Title of the research: Analisi del danno in materiali e strutture artificiali e biologiche. Scientific responsible: ANDREAUS Ugo

At the conference AGU 2007, I am co-author of a work, see the list of publications

I participated in the following research project: Progetti di Ricerca di Università, Università di Roma "La Sapienza" - Prot. C26A07MLAH. Title of the research: Modelli poromeccanici di secondo gradiente dei processi di liquefazione dei suoli: i vulcani di fango. Scientific responsible: dell'Isola Francesco

## 2007-2008

Tutor of the course Scienza delle Costruzioni (*structural mechanics*) for Aeronautical Engineering with professors L. Teresi and V. La Carbonara. For this collaboration, I have received remuneration (two courses).

## 2007-today

I am reviewer for the Journal *Research in Nondestructive Evaluation*.

## 2008

Participation in the Workshop on "Modelling and Interpretation of Ice Microstructures", hold at Goettingen from the 9<sup>th</sup> to the 11<sup>th</sup> of April 2008, where I presented a work, see the list of publications.

Hakime Seddik presents a work, which I have co-authored for the conference AOGS2008, session IWG04 "Recent Advances in Polar Sciences and Global Warming", see the list of publications.

Maurizio Porfiri presents a work, which I have co-authored, for the conference "The Mechanics Conference to Celebrate the 100th Anniversary of The Department of Engineering Science and Mechanics". See the list of publications.

I held a seminar titled "Forced response of structural systems with continuous damage represented by gap" for the PhD program of Structural Engineering at the Department of Structural and Geotechnical Engineering of "La Sapienza" University of Rome, Faculty of Engineering.

Participation in the following research project: 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

Participation in the following research project: Domanda di finanziamento Ricerca dell'Ateneo Federato della Scienza e della Tecnologia AST Progetto coordinato dell'Ateneo Federato - Prot. C26F08NYTM. Title of the research: Analisi del danno nelle biostrutture e nelle strutture biologiche. Scientific responsible: Andreaus Ugo

Participation in the following research project: Progetti di Ricerca di Università, Università di Roma "La Sapienza" - Prot. C26A08E7B3. Title of the research: Analisi e identificazione degli stati limite di stabilità e danno meccanico nei materiali e nelle strutture in vista dell'ottimizzazione. Scientific responsible: Giuseppe Ruta.

I am correlator of the dissertation of the candidate Massimo Campellone at the University "La Sapienza" in Rome

### 2008-2009

I am tutor for the course of *Scienza delle Costruzioni* (structural mechanics) for Environment and Territory Engineering with Prof. S. Vidoli. For this collaboration, I would have been paid (one course).

### 2008-2010

I am the tutor for the course of *Scienza delle Costruzioni* (structural mechanics) for Aeronautical Engineering with Professors P. Nardinocchi and V. La Carbonara. For this collaboration, I have received remuneration (four courses: two in the academic year 2008-2009 and two in 2009-2010)

I win an external contract for the assignment of the course Structural Engineering for the three-year Bachelor of for the Environment and Territory Engineering and for the part related to the grouping of structural mechanics. The part relating to the grouping of Strength of materials has been entrusted to Prof. S. Perno in the academic year 2008-2009 and to Ing. Petrini in the academic year 2009-2010. For this collaboration, I received a salary (two courses: one in the academic year 2008-2009 and one in the 2009/2010)

In the academic year 2009-2010 the lessons of Luca Placidi were videotaped and posted on the website of the School of Excellence University Tullio Levi-Civita at the following hyperlink: <https://www.youtube.com/watch?v=77em6fnqQ9A&list=PLWzIK5oO41sk06GjIAbSfLEi3Te2G6egd>

### 2009

For the conference PICR-2, I published an article, see the list of publications.

I participated in the workshop "Research Workshop on Bifurcations in Oscillators with Elastic and Impact Constraints" from November 4 to 6 November 2009, at the Imperial College London, United Kingdom. I publish an abstract in the book of abstracts of the conference. See the list of publications. Imperial College London reimbursed travel expenses and accommodation.

Participation to the following research project: 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

Participation in the following research project: Progetti di Ricerca di Università, Università di Roma "La Sapienza" - Prot. C26A098Y5S. Title of the research: Analisi e identificazione degli stati limite di stabilità e danno meccanico nei materiali e nelle strutture in vista dell'ottimizzazione. Scientific responsible: Giuseppe Ruta.

## 2009-2010

I win an external contract for the assignment of the course Aspetti strutturali dell'Ingegneria (Structural aspects of Engineering) for the graduate program of Ing. Environment for Sustainable Development for the part related to the grouping of structural engineering. The part relating to the grouping of strength of materials was entrusted to Eng. Petrini. For this collaboration, I have received remuneration. (One course for the academic year 2009-2010).

I win an external contract for the assignment of the course for the Safety of Structures for the Bachelor of the Environment and Territory engineering and for the part related to the grouping structural mechanics. The part relating to the grouping Safety engineering is entrusted Prof. G. Sciarra. For this collaboration, I have received remuneration. (One course for the academic year 2009-2010).

I am the owner of a scholarship at the Department of Structural and Geotechnical Engineering titled Nonlinear dynamics of bodies subject to continuous impact (*Dinamica nonlineare di corpi continui soggetti a impatto*) working with Prof. U. Andreaus.

## 2010

In April 2010, I participated in an internship application of 4 weeks at the Official Laboratory of Testing Materials and Structures of the Department of Structural Engineering, Water and Land of the University of L'Aquila.

Participation at the following research project: 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

Participation at the following research project: Progetti di Ricerca di Università, Università di Roma "La Sapienza" - Prot. C26A10NHW3. Title of the research: Analisi, identificazione e ottimizzazione di materiali e strutture nei confronti di stati limite di stabilità e danno meccanico. Scientific responsible: Giuseppe Ruta.

Participation in the following post-lauream courses

- *Variational Models and Methods in Solid and Fluid Mechanics* at CISM (International Centre for Mechanical Sciences) in Udine. Hyperlink of the course: <http://www.cism.it/courses/C1006/>  
The lessons of this course were video-recorded and published. The respective hyperlink is at [https://www.youtube.com/results?search\\_query=cism](https://www.youtube.com/results?search_query=cism)
- *Exploiting Nonlinear Behaviour in Structural Dynamics* at CISM (International Centre for Mechanical Sciences) in Udine. Hyperlink of the course: <http://www.cism.it/courses/C1009/>

Participation in the XVIII Convegno GIMC2010 di Meccanica Computazionale, with a work, see the list of publications.

I have won the competition for a position as Assistant Professor for grouping Scientific Discipline of Mechanics of Structures (Scienza delle Costruzioni) at the Faculty of Engineering of the International Telematic University UNINETTUNO.

## 2010-2011

Holder of Research Fellowship (for clusters disciplinary ICAR / 08 Construction Science, MAT / 07 and FIS / 01) at the Department of structures at the University of Rome "Roma Tre". Title: from active and passive vibration control in structural elements using piezoelectric networks: modeling, synthesis and experimental development. Scientific director Prof. N. Rizzi.

## 2010-today

I am reviewer for the Journal Phisica D.

I am a member of the Council of the International research center "Mathematics and Mechanics Of Complex Systems" (M&MOCS)

## 2011

Paola Nardinocchi presents a paper (which I co-authored); see the list of publications, at the Riunione del Gruppo Materiali dell'AIMETA. Udine, 23-25 Febbraio 2011.

I present a paper at the following conference: XIV Convegno ANIDIS L'Ingegneria Sismica in Italia. See the list of publications

Participation in the first summer school of Sperlonga 2011:

- *Atomistic and continuum descriptions of microstructures*. Hyperlink: <http://www.memocsevents.eu/sperlonga2011/>

Participation in the following research project: 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

Publications in journals. See the list of publications.

I am the tutor for the following courses: *Statica e dinamica dei sistemi meccanici [static and dynamic of mechanical systems] (including the course Elementi di Meccanica Razionale [elements of Rational Mechanics]), Scienza delle Costruzioni [structural mechanics], Tecnica delle costruzioni [Strength of materials], Geologia geodesia e geotecnica [Geology, geodesy and geotechnics]* for the **undergraduate degree in Civil and Environmental Engineering and of Scienza delle Costruzioni [structural mechanics] of the degree course in Engineering Management at the International Telematic University UNINETTUNO. For these collaborations I would have been paid. (4 courses)**

## 2011-2013

Participation in the following research project: PRIN 2009 Protocol: 200959L72B\_003. Title: Tessuti Biologici e Materiali Soffici Attivi: Modelli Matematici e Problemi. Scientific coordinator: Saccomandi Giuseppe. Scientific responsible: Teresi Luciano

## 2011-today

As an assistant professor I am the tutor for the following courses: *Statica e dinamica dei sistemi meccanici [static and dynamic of mechanical systems] (including the course Elementi di Meccanica Razionale [elements of Rational Mechanics]), Scienza delle Costruzioni [structural mechanics], Tecnica delle costruzioni [Strength of materials], Geologia geodesia e geotecnica [Geology, geodesy and geotechnics]* for the **undergraduate degree in Civil and Environmental Engineering and of Scienza delle Costruzioni [structural mechanics] of the degree course in Engineering Management at the International Telematic University UNINETTUNO.**

I am reviewer for the Journals **ZAMM** e **Entropy**.

I am assistant professor in structural mechanics (Scienza delle Costruzioni) at the engineering faculty of the International Telematic University **Uninettuno**.

## 2012

I present, at the workshop “Second Gradient and Generalized continua” organized at Cisterna di Latina by the professors F. dell’Isola and S. Forest, a paper, see the list of publications.

I present, at the eighth European congress of solid mechanics at Graz “8<sup>th</sup> European Solid Mechanics Conference”, a paper, see the list of publications.

I am the supervisor of 5 thesis at the University International Telematic Uninettuno, see the teaching activity section.

Publications in journal and book. See the list of publications

## 2012-today

I am reviewer for the Journals: Continuum mechanics and thermodynamics, Journal of Glaciology and Mathematical review.

## 2013

I participate in the following post-lauream course

- Dynamics, Stability and Control of Flexible Structures at the Third Sperlonga Summer School on Mechanics and Engineering Sciences.  
Hyper link to the course: <http://www.memocsevents.eu/sperlonga2013/>

I participate at the fourth Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013) presenting four papers. See the list of publications. I was the chair of one session of the mini symposium “Nonlinear Elasticity”

Prof. Giuseppe Rega presents a work (which I co-authored) at the ASME 2013 International Design Engineering Technical Conferences & Computers and Information in Engineering, see the list of publications.

Prof. Giuseppe Rega presents a work (which I co-authored) at the International Conference on Non-linear Dynamics in Engineering, see the list of publications.

I present two works at the Workshop on "Dynamics, stability and control of flexible structure". Senigallia, Ancona, Italy, 7 June 2013, see the list of publications.

Paolo Baragatti presents a work (which I co-authored) at the Workshop on "Dynamics, stability and control of flexible structure". Senigallia, Ancona, Italy, 7 June 2013, see the list of publications.

Publications in journals [see the list of publications](#).

I was the supervisor of four theses at the University International Telematic Uninettuno, [see the teaching activity section](#).

### 2013-today

I am reviewer for Archive of Applied Mechanics, Mechanics and Mathematics and Mechanics of Solids

I am professor for all the courses of structural mechanics (Scienza delle Costruzioni) at the international Telematic University Uninettuno.

### 2014

I participated at the Euromech Colloquium 563 "Generalized Continua and their applications to the design of composites and metamaterials", Cisterna di Latina. See the list of publications

I participated at the International Workshop for Young Researchers "Resilience by Design". Tomsk, Russia, 11-12/11/2014. See the list of publications

Publications in journals and in books of papers, introduction and translations. See the list of publications.

I was the supervisor of 5 theses at the University International Telematic Uninettuno, [see the teaching activity section](#).

### 2014-2015

I was the editor of a special issue for Mathematics and Mechanics of Solids in 2014-2015

I was the responsible of the quality system for the Bachelor course in Civil and Environmental engineering in the International Telematic University Uninettuno.

I was the scientific responsible of two post-doc students: Amr Ramadan and Ali Kezmene.

## 2014-2020

I got the Italian habilitation to become associate professor in the group of Mathematical Physics.

## 2014-today

I have the scientific responsibility of the following research grant amounting to €10000.

Title: Effetti della caduta massi su costruzioni e infrastrutture civili e industriali.

The grant is due to a transfer from Politecnico di Torino, which has received from Regione Valle d'Aosta a grant of €110000 for the same topic.

I am reviewer for the following journal: Nonlinear Dynamics.

I am associated to the Istituto Nazionale di Fisica Nucleare (INFN).

## 2015

I participated at the following workshops with a presentation. See the list of publications. Workshop on “From adaptive and architecture materials to integrated smart structures: a challenge in mechanical engineering and biomechanical applications” that has been taken place in Arpino (Italy), April 16-18, 2015, “Going down to the microscale in multiphysics problems from seismic driven risks to petroleum geomechanics” that has been taken place in Arpino (Italy), May 4-6, 2015, “Workgroup on Computational Mechanics of Generalized Continua and Applications to Materials with Microstructure”, that has been taken place in Catania, 29-31 October 2015.

I participated at the following workshops with a presentation. I have been the co-author of another presentation. See the list of publications. Bilateral French-Italy Workshop. Open issues and emerging approaches in geo-environmental mechanics. Organized by GDRI GeoMech & MEMOCS. Roma, Italy, 2-4 May 2017

I taught at the Inaugural Summer School on Mechanics of generalized continua and their applications to engineering materials and structures. 20-26 July 2015, Arpino, Italy

I was a guest at the Institut de mathématiques de Toulon et du Var of Prof. Pierre Seppecher for a period of research lasting one week. The subject of the study was the derivation of the equations of motion of a material with bend-gaps. The costs for this period have been taken by an Erasmus project.

I was a guest at the Université Paris-Est Créteil Val de Marne working with prof. G. Rosi for two periods of research lasting three weeks. The subject of the study was the derivation of the equations of motion of an implant-bone interphase. The costs for this period have been taken by the CNRS International Associate Laboratory Coss&Vita. Giuseppe Rosi and myself were the responsible of such a grant of €2500.

I gave two seminars in October titled “Gedanken experiments for the identification of microstructured continua” with different abstracts, see the list of publications, at Séminaire de Biomécanique, Université Paris-Est Créteil Val de Mar, Paris, (8/10/2015) and in occasion (12/10/2015) of the International Prize “Tullio Levi-Civita” at the Dipartimento di Matematica Castelnuovo.

Publications in journals, [see the list of publications](#).

I was the supervisor of [7 theses](#) at the University International Telematic Uninettuno, [see the teaching activity section](#).

Expert speaker within the training program of reinforcement of specific skills in the field of "Sustainable Living" at the training school Dante Alighieri at Fasano from the 17<sup>th</sup> of November to the 22<sup>nd</sup> of November 2015.

## 2015-2016

I was the scientific responsible of one post-doc student: Mohammed Galal El Sherbiny.

## 2015-2018

I was involved in the project LPEB: Licence professionnelle en formation ouverte et à distance pour la performance énergétique et environnementale des bâtiments en Fédération de Russie, en Chine et en Azerbaïdjan n. 561732-EPB-1-2015-1-FR-EPPKA2-CBHE-JP, financed by the program Erasmus+ Capacity building in Higher Education from 15/10/2015 to 15/10/2018.

## 2015-today

I am the management supervisor both for bachelor course in Civil and environmental engineering and for master in Civil Engineering in the International Telematic University Uninettuno.

I am reviewer for the following journals: 1) Acta Mechanica, 2) Biomechanics and Modeling in Mechanobiology and 3) European Journal of Environmental and Civil Engineering

## 2016

The CNRS International Associate Laboratory Coss&Vita, the Paris Federation of Mechanics Labs (<http://www.f2m.cnrs.fr>) and the International Center M&MoCS (<http://memocs.univaq.it/>) have organized a one-day workshop on "Regularised models of brittle fracture". I was one of the three organizers of the Workshop.

Website: <http://www.f2m.cnrs.fr/spip.php?article803>

I have been a guest at the Université Paris-Est Créteil Val de Marne working with prof. G. Rosi for one period of research lasting one week. The subject of the study has been the second step of the derivation of the equations of motion of an implant-bone interphase. The costs for this period have been taken by the CNRS International Associate Laboratory Coss&Vita. Giuseppe Rosi and myself were the responsible of such a grant of €2000.

I was invited (from the 25<sup>th</sup> to the 29<sup>th</sup> of April, 2016) by Jérôme Fortin (Chargé de recherche du CNRS) for a 1-week visit at the Ecole normale supérieure, Laboratoire de Géologie. The costs for this period have been taken by the Ecole normale supérieure.

Mohammed Galal El Sherbiny presented for the Erasmus Mundus GreenIT Final Meeting at the International Conference: Smart & green technologies as enablers for innovative & sustainable societies at University of Chemical Technology and Metallurgy-Sofia. 31st May and first of June 2016 the following work:

Title: Band Gap in Metamaterial Structures

Authors: Mohammed G. El Sherbiny, Luca Placidi



Publications in journals (see the [list of publications](#))

Participation in the following post-lauream course:

Alghero Summer School on “Elastic Metamaterials: From Theory to Applications”

22-29 May 2016, Alghero, Italy, website:

<http://www.memocsevents.eu/wordpress/cossevita/alghero-summer-school/>

I participated and I taught at the following post lauream course

The CNRS International Associate Laboratory Coss&Vita, The Paris Federation of Mechanics Labs and The International Center M&MoCS organize an Arpino School on “Models of Generalized Continua characterized by Quasi-Inextensible Fibrous Structures: New Ideas for Models and Applications” that took place in Arpino (FR), Italy, 19-23 September 2016. Click [here](#) to visit website: <http://www.memocsevents.eu/wordpress/cossevita/g-school-arpino-program/>. The program is [here](#): <http://www.memocsevents.eu/wordpress/cossevita/wp-content/uploads/2016/09/Programma-Arpino-settembre-2016.pdf>

I gave a keynote (i.e., half plenary) lecture at the following conference

EMERGING TRENDS IN APPLIED MATHEMATICS AND MECHANICS

ETAMM 2016, May 30 - June 3, 2016, Perpignan, France

Website: <http://etamm.sciencesconf.org/>

I was the supervisor of [4 thesis](#) at the University International Telematic Uninettuno

I was included in the editorial board of the conference called “Processi di analisi per strategie di valorizzazione dei paesaggi urbani” that has been taken in Roma the 29<sup>th</sup> of January 2016.

## 2016-today

French habilitation HDR with a thesis called: “Enhanced continuum mechanics”.

I am reviewer for the following journals: Control of Nonlinear Systems, Journal of Engineering Mathematics, Journal of Computational, Nonlinear Dynamics, The Open Construction & Building Technology Journal and International Journal of Thermophysics.

I am in the editorial board of “Nanomechanics Science and Technology: An International Journal”

Hyperlink: <http://www.begellhouse.com/journals/nanomechanics-science-and-technology/editorial.html>

I am the coordinator of the first deliberative committee “Control and Representation” of the International research center “Mathematics and Mechanics Of Complex Systems” (M&MOCS).

See also the hyperlink: [http://memocs.univaq.it/?page\\_id=379](http://memocs.univaq.it/?page_id=379) and <http://memocscenter.univaq.it/memocs/en/il-centro/organigramma/>

## 2017

Member of the Scientific Committee of the **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. In this conference, I have presented one paper and I have been the co-authors of two further papers.

Besides, I have been invited and participated at the following workshops with a presentation:

- 1) I have been the co-author of another presentation. See the list of publications. Bilateral French-Italy Workshop. Open issues and emerging approaches in geo-environmental mechanics. Organized by GDRI GeoMech & MEMOCS. Arpino, Italy, 2-4 May 2017
- 2) I have been the co-author of another presentation. See the list of publications. French-Italy Workshop "Bone biomechanics: multiscale and multiphysical aspects". Giuliano di Roma, Italy, 26-28 September 2017
- 3) "New developments in micropolar theory" on 6th and 7th November 2017 at Berlin Institute of Technology, Institute of Mechanics, Chair of Continuum Mechanics and Constitutive Theory. I have received the reimbursement of the mission by the organization of the conference. I publish an abstract in the book of abstracts of the conference. See the list of publications.

I participated and I taught at the following post lauream course from 29/5/2017 to 2/6/2017

Name of the course: "**Energy methods in the mechanics of metamaterials**"

Place: Warsaw university of Technology

Hyper link: <https://www.wip.pw.edu.pl/Aktualnosci/Kurs-Energy-methods-in-the-mechanics-of-metamaterials>

I have presented two papers, I have been co-authors of further three papers, I have co-chaired one session and chaired another session for the **ICMM5** organized by the International Research Center on Mathematics and Mechanics of Complex Systems (M&MoCS) of the University of L'Aquila in collaboration with the Laboratoire International Associé Coss&Vita, the Fédération Francilienne de Mécanique, Matériaux, Structures et Procédés (F2M) and the Department of Architecture of the University ROMA TRE. The ICMM5 is the International Conference on Material Modeling that has taken place at Palazzo Argiletum, Rome, Italy from the 14<sup>th</sup> to the 16<sup>th</sup> of June 2017.

I was a preliminary examiner of the doctoral dissertation of Sergei Khakalo for the Aalto University, Department of Civil engineering.

I am guest editing for Mechanics Research Communications (**MRC**) and with professors Anil Misra and Takashi Matsushima a special issue titled "Granular Material Models across Scales" to appear in the early part of 2018 for the Journal

## 2017-2021

Tutor of the PhD candidate Marco Laudato in Mathematics and Models Università degli Studi dell'Aquila. XXXIII cycle. The 1<sup>st</sup> of June 2021 Marco Laudato has done the final disuccion of his thesis.

## 2017-today

I am reviewer for the following journals: Advances in Mechanical engineering, The Journal of the Acoustical Society of America, Applied Mathematical Modeling (APM), Computational Materials Science, Journal of Applied Mechanics, Proceedings of the Royal Society A (Mathematical, physi-

cal and engineering sciences), Microelectronic Engineering (MEE), Mathematical Problems in Engineering, Journal of Intelligent Material Systems and Structures (JIM) and International Journal of Non-Linear Mechanics (NLM).

I am the coordinator of those researchers of the International Telematic University Uninettuno that are affiliated to the International research center “Mathematics and Mechanics Of Complex Systems” (M&MOCS)

I am a member of the Doctoral School in Mathematics and models (membro del Collegio dei Docenti del Dottorato in Metodi e Modelli dell’Università degli Studi dell’Aquila) of the University of L’Aquila.

I am a member of the Editorial Board of the periodical academic journal “Vestnik of Tomsk State University of Architecture and Building”.

Hyperlink: [http://www.tsuab.ru/en/research/vestnik/editorial\\_board/](http://www.tsuab.ru/en/research/vestnik/editorial_board/)

I am coordinating the engineering faculty contribution to the Master on “Water’s Awareness, Consciousness, Knowledge and Management” organized by the water’s academy (<http://www.wateracademy.eu/>) and by the International Telematic University Uninettuno.

Tutor of the PhD candidate Rafal Drobnicki in Mathematics and Models Università degli Studi dell’Aquila. XXXIII cycle

## 2018

I gave 6-hours lectures from the 1<sup>st</sup> to the 7<sup>th</sup> of February 2018 within the doctoral school in Mathematics and models of the University of L’Aquila titled “Variational derivation of continuum mechanics equations”.

I taught at the following post lauream course from 5/3/2018 to 16/3/2018

Name of the course: “**Structure stability**”

Place: Warsaw university of Technology

I taught at the following post lauream course from 9/7/2018 to 13/7/2018

Name of the course: “**Mechanics of Fibrous Materials and Application: Physical and Modelling Aspects**”

Place: CISM - International Centre for Mechanical Sciences

The Lia Coss&Vita, joint research unit between the CNRS Federation of Paris Mechanics Labs and the M&MoCS Center, organizes a “Encounter of the third type” on the topic “Generalized Continuous Media and Microstructures” from April 3rd to 7th, 2018. I have been invited and participated at this workshop with a presentation. See the list of publications.

I was invited by Wolfgang H. Müller and Holm Altenbach for a workshop named “Generalized Continua in Engineering - Theory, Experiments and Applications” from the 3rd to the 5th of September 2018 at Berlin Institute of Technology, Institute of Mechanics, Chair of Continuum Mechanics and Constitutive Theory in cooperation with Otto-von-Guericke-Universität Magdeburg.

I participated at the following conference: gimc2018 : XXII Convegno Italiano di Meccanica Computazionale, Ferrara 13-14 September 2018. With a presentation: “An application of variational

methods in strain gradient damage and fracture mechanics” authored by Placidi Luca , Barchiesi Emilio, Misra Anil

## 2018-today

I am reviewer for the following journals: Materials and Design, International Journal of Mechanical Sciences.

I am an Independent External Experts reviewer for COST, European Cooperation in Science and Technology.

I am a member of the Editorial Board of the periodical academic journal “BMC Mechanical Engineering”.

Hyperlink: <https://bmcmecheng.biomedcentral.com/about/editorial-board>

I am a member of the Editorial Board of the periodical academic journal “Continuum Mechanics and thermodynamics”.

Hyperlink:

<https://www.springer.com/physics/classical+continuum+physics/journal/161?detailsPage=editorialBoard>

I got the habilitation to become Associate Professor in Structural Mechanics in Italy

Tutor of the PhD candidate Dmitry Timofeev in Mathematics and Models Università degli Studi dell’Aquila. XXXIV cycle

## 2019

I gave 10-hours lectures (with Prof. Francesco dell’Isola) within the doctoral school in Mathematics and models of the University of L’Aquila titled “Variational derivation of continuum mechanics equations”.

Participation at the following workshop (8-12 April 2019, Arpino, Italy) “Nonlinear Instabilities and localization in materials, geomaterials, metamaterials and structures” with a presentation titled “Damage and plastic evolution of second gradient effective elastic moduli of heterogeneous granular materials”. The workshop was coordinated by Samuel Forest, Matthieu Mazière, Ioannis Stefanou and Francesco D’Annibale.

From 25<sup>th</sup> to the 29<sup>th</sup> of April I visited Professor Mahmoud Kadkhodaei at the Department of Mechanical Engineering, Isfahan University of Technology. The 28<sup>th</sup> of April I gave an invited talk titled “An application of variational methods in strain gradient damage and fracture mechanics”.

Participation at the following workshop “Bilateral French-Italy Workshop. Computational methods and scale transition for geomaterials” organized by GDRI GeoMech & MEMOCS. Arpino, Italy, 20-22 May 2019, presenting a work, whose abstract was published in the book of abstracts, see the list of publications.

Participation at the following workshop “Joint MEMOCS Workshop on Models of Complex Materials and Systems” 20-23 June 2019, Arpino, Italy, presenting a work, whose abstract was published in the book of abstracts, see the list of publications.

Participation at the following conference “ICoNSoM 2019. International Conference on Nonlinear Solid Mechanics, 16-19 June 2019, Roma, Italy, presenting a work, whose abstract was published in the book of abstracts, see the list of publications.

Participation, 16-19 September 2019, Roma, Italy in the national conference AIMETA 19 in Roma, presenting a work, whose abstract was published in the book of abstracts, see the list of publications.

Participation at the HLRT Symposium 2019 by Water Academy SRD, see also the following two links: [https://www.youtube.com/watch?time\\_continue=10&v=W34ZcGg-iWU&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=10&v=W34ZcGg-iWU&feature=emb_logo) and [https://www.youtube.com/watch?time\\_continue=4&v=rq9B3ah2u8&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=4&v=rq9B3ah2u8&feature=emb_logo)

Organization of the Kick-off meeting of the International Research Project (IRP) Coss&Vita joint with the Workshop on elastodynamics of microstructured media that will be held on 17th – 18th October 2019 at the École des Ponts ParisTech, Champs sur Marne, France.

Participation in the commission of the PhD exam in “Matematica e Modelli” and for the XXXI cycle of Antonio Battista at La Rochelle titled “An analysis of nonlinear thin structures”.

PhD lecture at the Università degli studi di Salerno with a lecture on “An application of variational methods in strain gradient damage and fracture mechanics”. The link is [here](https://risdiciv.it/wp-content/uploads/2021/02/Seminario_Placidi_061219.pdf): [https://risdiciv.it/wp-content/uploads/2021/02/Seminario\\_Placidi\\_061219.pdf](https://risdiciv.it/wp-content/uploads/2021/02/Seminario_Placidi_061219.pdf)

## 2019-2021

Years 2019-2021: Participation to the project “3D printing in VET - n. 2019-1-EL01-KA202-062909” financed by the program Erasmus+ Strategic Partnership – Cooperation for innovation and the exchange of good practices. From 01/10/2019 to 30/09/2021.

## 2019-today

I am reviewer for the following journals: Mathematical and Computational Applications, Journal of Packaging Technology and Research, Journal of Mechanical Engineering Science JMES, Physica Status Solidi B: Basic Solid State Physics.

I am editor of the following journal: The Russian Automobile and Highway Industry Journal

I am the coordinator (see also the website <https://f2m.cnrs.fr/le-laboratoire/irp-cossvita/research-groups/elasto-dynamics-of-microstructured-media-eladyn/>) of the Elasto-Dynamics of Microstructured Media (ELADYN) group International Research Project (IRP) Coss&Vita

In June 2019 I have become Associate Professor at the International Telematic University Uninettuno.

Tutor of the PhD candidate Valerii Maksimov in Ingegneria dell'Innovazione Tecnologica Università Telematica internazionale Uninettuno.

## 2020

I gave 10-hours lectures (with Prof. Francesco dell'Isola and Dr. Emilio Barchiesi) within the doctoral school in Mathematics and models of the University of L'Aquila titled "Variational derivation of continuum mechanics equations".

Participation in the commission for the recruitment of the PhD exam in "Matematica e Modelli".

Participation in the commission for the recruitment of one associate professor at the Department of "Architettura e Disegno Industriale" of the University "Università degli Studi della Campania "Luigi Vanvitelli".

Participation to the project "NET - ScieNcE Together". Participation at the European research night with a talk for the Italian national TV Raiplay

Participation to the seminar "Come fare divulgazione scientifica in modo efficace e coinvolgente" for the European research night 2020. Teacher: Giovanni Carrada

Participation to the "eladyn-bio-2020" : Workshop on elastodynamics and biomechanics. The e-Workshop Advances in ELAstoDYNamics of architected materials and BIOmaterials is organised by the International Research Project (IRP) Coss&Vita of the CNRS. Due to the COVID-19 related crisis, the workshop will be held in an online format. See the presentation at [this hyperlink](https://eladyn-bio-2020.sciencesconf.org/data/pages/Presentation_placidi_20201112.pdf):  
[https://eladyn-bio-2020.sciencesconf.org/data/pages/Presentation\\_placidi\\_20201112.pdf](https://eladyn-bio-2020.sciencesconf.org/data/pages/Presentation_placidi_20201112.pdf)

World's Top 2% Scientists by Stanford University: in the field Mechanical Engineering & Transports I am 739th among 92645. Download the file from [this link](https://www.researchgate.net/publication/345921476_World's_Top_2_Scientists_by_Stanford_University):  
[https://www.researchgate.net/publication/345921476\\_World's\\_Top\\_2\\_Scientists\\_by\\_Stanford\\_University](https://www.researchgate.net/publication/345921476_World's_Top_2_Scientists_by_Stanford_University)

## 2020-2022

Participation to the project "Destinazione Comune". Fondo Asilo, Migrazione e Integrazione (FAMI) Annualità di riferimento 2014-2020

## 2020-2029

I got the habilitation to become Full Professor both in Structural Mechanics (from 14/1/2020 to 14/1/2029) and in Mathematical Physics (from 9/11/2020 to 9/11/2029) in Italy

## 2020-today

I am reviewer for the following journals: Journal of Elasticity, International Journal of Disaster Risk Science and Journal of Composite materials, Techno-press.

I am a member of the Scientific committee of the International research center "Mathematics and Mechanics Of Complex Systems" (M&MOCS). See also the hyperlink:  
[http://memocs.univaq.it/?page\\_id=333](http://memocs.univaq.it/?page_id=333)

Tutor of the PhD candidate Nasrin Rezaei in Ingegneria dell'Innovazione Tecnologica Università Telematica internazionale Uninettuno.

## 2021

Séminaire du laboratoire PIMM titled “Hemivariational continuum approach for granular solids with damage-induced anisotropy evolution”. The video of the seminar is here:

[https://www.youtube.com/watch?v=leSnCdYk\\_7I](https://www.youtube.com/watch?v=leSnCdYk_7I)

Participation to the conference NODYCON2021 with a work titled “Heuristic homogenization for bandgap bi-atomic mass-spring systems and application to tensegrity meta-structure” and authored by Ada Amendola, Marco Miniaci, Fernando Fraternali, Luca Placidi.

Participation of the M&MoCS Workshop on Structural Mechanics 2021 20-23 September 2021, Arpino with a work “A granular based elasto plastic damage energy formulation for strain gradient solids” and authored by Luca Placidi, Emilio Barchiesi, Francesco dell’Isola, Valerii Maksimov, Anil Misra, Nasrin Rezaei, Angelo Scrofani and Dmitry Timofeev.

Participation of the IUTAM Symposium - Generalized continua emerging from microstructures 19-23 Jul 2021 Paris (France) with a work “A granular-based elasto-plastic–damage energy formulation for strain gradient solids” and authored by Luca Placidi, Emilio Barchiesi, Francesco dell’Isola, Valerii Maksimov, Anil Misra, Nasrin Rezaei, Angelo Scrofani and Dmitry Timofeev.

Reviewer for VQR (Research quality assessment from ANVUR, that is the Italian National Agency for the evaluation of universities and research institutes) 2015-2019

Participation of Mach Conference. virtual conference in the US, 2021, April, 7-9 with a work “Damage Modeling for Second Gradient Continua: Granular Micromechanics and Variational Methods” and authored by Anil Misra, Placidi L, Emilio Barchiesi, Dmitry Timofeev, Valerii Maximov.

Participation of MECA-J 2021 with a work “Micromechanics-based elasto-plastic–damage energy formulation for strain gradient solids with granular microstructure” and authored by E. Barchiesi, Placidi L, Anil Misra, Timofeev, Dmitry.

Participation of up-comech2021 : e-Workshop on design and analysis of non-classical architected materials. Paris, France, 8-9 April 2021 with two works:

- 1) “Identification, based on granular micromechanics, of elastic isotropic strain gradient stiffness matrices for geometrically nonlinear deformations” and authored by Emilio Barchiesi, Anil Misra, Placidi L, Emilio Turco, Dmitry Timofeev, Valerii Maksimov, Nasrin Rezaei, Angelo Scrofani
- 2) “Numerical analysis of softening materials: some often overlooked aspects” and authored by Emilio Barchiesi, Salvatore Sessa, Placidi L, Nahiene Hamila (2021).. In:

## 2021-today

I am reviewer for the following journals: Journal of Structural Stability and Dynamics

## List of teaching activities

Note: In parentheses, you find the number of courses. The text in parentheses **in bold** indicates that I perceived for those courses a financial remuneration.

2000

Collaboration in teaching the course *Dynamics* at *Virginia Tech*. For this collaboration, I have received remuneration. (1 course).

2002

Collaboration in teaching the course *Structural Mechanics* at *Virginia Polytechnic Institute and State University*. For this collaboration, I have received remuneration. (1 course).

2004-2005, 2005-2006, 2006-2007 & 2007-2008

Collaboration in teaching with Prof. F. dell'Isola for the course of *Scienza delle Costruzioni* (Structural mechanics) of the Bachelor of environment and territory engineering. (4 courses).

2008-2009 & 2009-2010

Collaboration with Prof. dell'Isola in teaching the course *Mechanics of solids* (*Meccanica dei Solidi*) for the three-year Bachelor of Mechanical engineering. (2 courses).

2005-2006 & 2006-2007

Tutor of *Scienza delle Costruzioni* (structural mechanics) for the bachelor of Aeronautical engineering with prof. U. Andreaus. For this collaboration, I have received remuneration. (2 courses).

2005-2006, 2006-2007, 2008-2009 & 2009-2010

Tutor of *Scienza delle Costruzioni* (structural mechanics) for the bachelor of Aeronautical Engineering with prof. Nardinocchi. For this collaboration, I have received remuneration. (4 courses).

2005-2006, 2006-2007, 2007-2008 & 2008-2009

Tutor with Prof M. Pignataro for the course *Scienza delle Costruzioni* (structural mechanics) for the degree courses in Chemistry and Energetic Engineering. (4+4=8 courses).

2005-2006, 2006-2007, 2007-2008

I win an external contract for the assignment of the course *Aspetti strutturali dell'Ingegneria Civile e Ambientale* (Structural Aspects of Civil and Environmental Engineering) for the graduate program of Environment Engineering for Sustainable Development. For this collaboration, I received remuneration (3 courses).



2005-2006, 2007-2008

I win an external contract for the assignment of the course Laboratorio di Aspetti strutturali (Laboratory of Structural Aspects) for the graduate program of Environment Engineering for Sustainable Development. For this collaboration, I received remuneration. (2 courses).

2007

I hold two courses (*Statics & Dynamics*) in the summer session of the academic year 2007 as adjoin professor at the Polytechnic Poly New York (USA). For this collaboration, I have received remuneration. (2 courses).

Correlator of the following thesis at the University of Rome "La Sapienza"

Candidate: Filippo Cellini

Title: Analisi Dinamica di una trave con vincolo monolatero

Correlator of the thesis at the University of Rome "La Sapienza" of the candidate Steven Ports

2007-2008

Tutor of the course Scienza delle Costruzioni (*structural mechanics*) for Aeronautical Engineering with Prof. L. Teresi. For this collaboration I have received remuneration (1 course).

2007-2008, 2008-2009 & 2009-2010

I am the tutor for the course of *Scienza delle Costruzioni* (structural mechanics) for Aeronautical Engineering with Prof. V. La Carbonara. For this collaboration, I have received remuneration. (3 courses).

2008

I am correlator of the dissertation of the candidate Massimo Campellone at the University "La Sapienza" in Rome.

2008-2009

I am tutor for the course of *Scienza delle Costruzioni* (structural mechanics) for Environment and Territory Engineering with Prof. S. Vidoli. For this collaboration, I would have been paid (one course).

2008-2009 & 2009-2010

I win an external contract for the assignment of the course Structural Engineering (Ingegneria delle strutture) for the three-year Bachelor of for the Environment and Territory Engineering and for the part related to the grouping of structural mechanics. The part relating to the grouping of Strength of materials has been entrusted to Prof. S. Perno in the academic year 2008-2009 and to Ing. Petrini in



the academic year 2009-2010. For this collaboration, I received a salary (two courses: one in the academic year 2008-2009 and one in the 2009/2010)

In the academic year 2009-2010 these lessons were videotaped and posted on the website of the School of Excellence University Tullio Levi-Civita at the following hyperlink:

<https://www.youtube.com/watch?v=77em6fnqQ9A&list=PLWzIK5oO41sk06GjAbSfLEi3Te2G6egd>

### 2009-2010

I win an external contract for the assignment of the course *Aspetti strutturali dell'Ingegneria* (Structural aspects of Engineering) for the graduate program of Ing. Environment for Sustainable Development for the part related to the grouping of structural engineering. The part relating to the grouping of strength of materials was entrusted to Eng. Petrini. For this collaboration, I have received remuneration. (1 course for the academic year 2009-2010).

I win an external contract for the assignment of the course for the Safety of Structures (*Sicurezza delle Strutture*) for the Bachelor of the Environment and Territory engineering and for the part related to the grouping structural mechanics. The part relating to the grouping Safety engineering is entrusted Prof. G. Sciarra. For this collaboration, I have received remuneration. (1 course for the academic year 2009-2010).

### 2010-2011

Tutor with Prof M. Pignataro for the course *Scienza delle Costruzioni* (structural mechanics) for the degree courses in Chemistry and Energetic Engineering. (1 course).

### 2012

I was the supervisor of the following thesis at the University International Telematic Uninettuno:

Candidate: Cristan Anniboletti:

Title: Rischio sismico di elementi non-strutturali e analisi numerica dal caso studio delle tamponature

Candidate: Daniel Condello

Title: Dinamica Globale e problema del distacco con isolatori anisismici a pendolo scorrevole, per una data geometria

Candidate: Andro Soliman Kazi

Title: Scienza delle costruzioni e le nuove tecniche di progettazione

Candidate: Vincenzo Perreca

Title: Analisi delle sollecitazioni indotte da traffico veicolare alle infrastrutture interrato in aree urbane e relativo studio della profondità di posa ridotta dei sottoservizi attraverso analisi tecnico/scientifica

Candidate: Pierluigi Romeggio

Title: Progetto di un edificio in c.a. in zona sismica ai sensi delle ntc 2008: confronto tra struttura a base fissa e su isolatori

## 2013

I was the supervisor of the following thesis at the University International Telematic Uninettuno:

Candidate: Maurizio CARUSONE:

Title: Rischio sismico per gli elementi non strutturali: Riduzione della vulnerabilità delle tamponature mediante rivestimento con rete in tessuto polimerico.

Candidate: ANDREA DANTI

Title: Stati limite e instabilità rispetto alle sollecitazioni di un carroponete sulle strutture portanti in carpenteria metallica

Candidate: Ludovico Di Cesare

Title: Dinamica Globale e Ruolo della Distribuzione dei Coefficienti di Attrito in un Sistema di Isolatori Antisismici a Pendolo Scorrevole

Candidate: Claudio Pollio

Title: Tecniche innovative di adeguamento antisismico. Progettazione di un edificio in c.a. su isolatori.

## 2014

I was the supervisor of the following thesis at the University International Telematic Uninettuno:

Candidate: Andrea Casellato

Title: studio critico sull'uso dei vincoli cedevoli nella modellazione di strutture in legno

Candidate: Cristian Deiana

Title: Verifica degli indicatori di integrità strutturale per la prevenzione dei collassi progressivi

Candidate: Massimiliano Petra

Title: Analisi del moto di alcune strutture con isolatori a pendolo scorrevole

Candidate: Flavio Pomanti

Title: Le prove dinamiche nell'ingegneria civile, stato dell'arte, analisi normativa ed applicazione pratica.

Candidate: Luca Valanzuolo

Title: Interazione del modulo di young di una struttura con un sistema di isolatori antisismici a pendolo scorrevole

## 2015

I was the supervisor of the following thesis at the University International Telematic Uninettuno:

Candidate: Cristiano Ranfi

Title: Robustezza e compartimentazione per lo studio della vulnerabilità degli edifici e la prevenzione dei collassi progressivi

Candidate: Michele Suriano

Title: Caduta Massi: Analisi Dinamica dell'impatto

Candidate: Giacomo Zeppi  
Title: Indagini geofisiche mediante onde sismiche superficiali

Candidate: Alessandro Favilli  
Title: Dinamica globale, analisi e applicazione di isolatori sismici a pendolo scorrevole ad un edificio con struttura intelaiata in calcestruzzo armato secondo le N.T.C 2008.

Candidate: Silvia Insalaco  
Title: Il Dilatometro piatto (DMT) nelle indagini geotecniche – Effettuazione prova DMT su un terreno e previsione dei cedimenti in caso di carico

Candidate: Alessio Mazzinghi  
Title: Comportamento strutturale delle facciate ventilate in presenza di azioni esterne di tipo eccezionale

Candidate: Alberto Tavolaro  
Title: Tipologie di infissione dei monoliti e opere di sostegno dei binari nell'ambito di una sede ferroviaria

I taught at the Inaugural Summer School on Mechanics of generalized continua and their applications to engineering materials and structures. 20-26 July 2015, Arpino, Italy

2016

I was the supervisor of the following thesis at the University International Telematic Uninettuno:

Candidate: Clara Cipro  
Title: Danneggiamento delle strutture in regime dinamico

Candidate: Marcello Antonio Molfetta  
Title: An investigation into graphene-incorporated cement-based materials

Candidate: Nicola Amato  
Title: Dimensionamento di un piano tipo in cemento armato

Candidate: Luigi Campese  
Title: Metamateriali nella Tecnica delle Costruzioni, analisi numerica di un reticolo Pantografico.

Candidate: Antonio Sutura Sardo  
Title: Proprietà fisiche e meccaniche del cls indurito definite attraverso la prova standardizzata di rottura a compressione

Candidate: Cristian Anniboletti (Master of science)  
Title: Studio della risposta sismica di strutture con smorzatori a massa accordata

I participated and I taught at the following post lauream courses

The CNRS International Associate Laboratory Coss&Vita, The Paris Federation of Mechanics Labs and The International Center M&MoCS organize an Arpino School on “Models of Generalized Continua characterized by Quasi-Inextensible Fibrous Structures: New Ideas for Models and

Applications” that took place in Arpino (FR), Italy, 19-23 September 2016. Click [here](http://www.memocsevents.eu/wordpress/cossevita/g-school-arpino-program/) to visit website: <http://www.memocsevents.eu/wordpress/cossevita/wp-content/uploads/2016/09/Programma-Arpino-settembre-2016.pdf>. The program is here: <http://www.memocsevents.eu/wordpress/cossevita/wp-content/uploads/2016/09/Programma-Arpino-settembre-2016.pdf>

## 2017

I participated and I taught at the following post lauream course from 29/5/2017 to 2/6/2017

Name of the course: “Energy methods in the mechanics of metamaterials”

Place: Warsaw university of Technology

Hyper link: <https://www.wip.pw.edu.pl/Aktualnosci/Kurs-Energy-methods-in-the-mechanics-of-metamaterials>

I was a preliminary examiner of the doctoral dissertation of Sergei Khakalo for the Aalto University, Department of Civil engineering.

I was the supervisor of the following theses at the University International Telematic Uninettuno:

Candidate: Abanob Atef Rezk

Title: Le Valvole (I was the tutor with Prof. Elpidio Romano)

Candidate: Nicola BRESCIA

Title: Studio di Fattibilità di un Progetto nell’ambito dell’IoT (I was the tutor with Prof. Marta Flamini)

Candidate: Cristiano Comincini

Title: Miglioramento sismico di un edificio esistente con analisi costo di intervento.

Candidate: Virginio Cusi

Title: Pali mega nel consolidamento fondazioni

Candidate: Valentina Di Bella

Title: La Risposta Sismica Di Un Edificio In X-Lam Al Variare Della Rigidezza Delle Connessioni Metalliche

Candidate: AbdelRahman Reda

Title: Isolamento termico con l’uso di paglia di riso

Candidate: Ahmed Khaled

Title: Stampaggio ad iniezione plastica di prodotti non simili

Candidate: Salvatore La Scala

Title: Attenuazione delle vibrazioni di impianti mediante dispositivi risonanti (un caso applicativo)

Candidate: Luca Panciullo

Title: Interventi di rinforzo di strutture in muratura con materiali compositi fibrorinforzati: confronto tra il metodo classico, rete elettrosaldata e betoncino, con il metodo che sfrutta la tecnica Dell’intonaco armato sottile composto da rete in frp.

Candidate: Andrea Tommaso Panico

Title: Un’analisi dinamica del metacalcestruzzo (I was the tutor with Prof. Alessandro Fantilli)

Candidate: Elisa Tagliaferro

Title: Progettazione di una passerella pedonale in zona sismica

Candidate: Marco Tambani

Title: Uso e vantaggi delle palancole laminate a freddo

Candidate: Antonino Offerente (Master of Science)

Title: Progettazione di un edificio in zona sismica e verifica numerica e sperimentazione con uno smorzatore a massa accordata interpretato dal solaio di copertura

Candidate: Stefano Piscioneri (Master of Science)

Title: Progettazione di un edificio multipiano in zona sismica e verifica numerica con un sistema di smorzatori a massa accordata interpretati dai solai dell'edificio.

Candidate: Giovanna Orlando (Master of Science)

Title: Progettazione sismica di una struttura prefabbricata: Pannelli di rivestimento come smorzatori a massa accordata

Candidate: Matteo Di Tizio (Master of Science)

Title: Simulazione di una procedura per l'identificazione numerica di microstrutture bi-dimensionali D4 con un modello elastico lineare di secondo gradiente D4

Candidate: Clara Cipro (Master of science)

Title: Laboratorio Sismico Didattico

## 2017-today

PhD candidate Marco Laudato in Mathematics and Models Università degli Studi dell'Aquila. XXXIII cycle

Tutor of the PhD candidate Rafal Drobnicki in Mathematics and Models Università degli Studi dell'Aquila. XXXIII cycle

## 2018

I participated and I taught at the following post lauream course from 5/3/2018 to 16/3/2018

Name of the course: "**Structure stability**"

Place: Warsaw university of Technology

I was the supervisor of the following thesis at the University International Telematic Uninettuno:

Candidate: Bishoy Ramzy

Title: Metodi non distruttivi – ultrasuoni

Candidate: Marco Buscetti

Title: Intervento di adeguamento sismico su un edificio scolastico esistente con struttura portante in cemento armato tramite l'utilizzo di un sistema di isolamento sismico alla base

Candidate: Costantino Fresolone

Title: La teoria della consolidazione di Terzaghi e l'utilizzo del jet-grouting per il consolidamento del fronte di scavo

Candidate: Maddalena Lupiano

Title: Confronto tra dispositivi di isolamento alla base per la struttura in cemento armato: Scuola Media "Don Bosco"

Candidate: Alessandro Mori

Title: Applicazione di masse aggiunte per la quantificazione di secondo livello di un danno strutturale

Candidate: Francesca Nemi

Title: Structural modeling using Abaqus of a reinforced beam subject to impact

Candidate: Debora Valentina Pelazza

Title: Studio di una trave, rinforzata mediante barre longitudinali in GFRP, soggetta ad un impatto

Candidate: Mario Gaetano Peta

Title: Aspetti ingegneristici e strutturali delle opere dell'ingegnere Riccardo Morandi

Candidate: Cristiano Ranfi (Master of science)

Title: Progettazione di strutture in c.a. con travi come smorzatori a massa accordata

Candidate: Simulazione di strutture bidimensionali con geometria data e analisi dei risultati

Title: Angela Rosselli

## 2018-today

Tutor of the PhD candidate Dmitry Timofeev in Mathematics and Models Università degli Studi dell'Aquila. XXXIII cycle

## 2019

I was the supervisor of the following thesis at the University International Telematic Uninettuno:

Candidate: Sara Buonanotte

Title: FRP – I materiali compositi fibrorinforzati

Candidate: Andrea De Stasio

Title: Rilevazione del danno mediante analisi dinamica di strutture opportunamente modificate

Candidate: Kirolos Salib

Title: Stampante 3D, scenario di effettiva evoluzione del mercato dell'edilizia, individuazione di strutture realizzate mediante stampanti 3D, case study con specifiche di dettaglio

Candidate: Mark Mamdouh Mahrous Ghaly

Title: Stampante 3D in edilizia

Candidate: Mark Edward Milad Soliman

Title: Stampante 3D in edilizia

Candidate: Kirolos Nagi Attalla Azer

Title: Analisi FEM (Finite Element Method) su un Pantografo di Sollevamento Software utilizzato : SolidWorks

Candidate: Alessandro Favilli (Master of science)

Title: Analisi dinamica lineare di un edificio multipiano avente il solaio di copertura assimilabile ad un sistema di smorzatori a massa accordata

Candidate: Raffaele Russo (Master of science)

Title: Cupole: l'arte incontra la scienza e la tecnica delle costruzioni

Candidate: Andrea Santello (Master of science)

Title: Progettare una struttura antisismica in alluminio per lo spettacolo

Candidate: Giacomo Zeppi (Master of science)

Title: metamateriali strutturali: studio su cerniere flettenti per risonatori antisismici

Candidate: Cristiano Comincini (Master of science)

Title: L'evoluzione dell'industria con la stampa 3D

Candidate: Giovanni Oliveto

Title: Il degrado delle opere in calcestruzzo armato, tecniche di indagine e di recupero

Candidate: Mario Policastro (Master of Science)

Title: Stampanti 3D: nuovi scenari applicativi per l'industria delle costruzioni e l'edilizia sostenibile

Candidate: Andrea Santello

Title: Progettare una struttura antisismica in alluminio per lo spettacolo

Participation in the commission of the PhD exam in "Matematica e Modelli" and for the XXXI cycle of Antonio Battista at La Rochelle titled "An analysis of nonlinear thin structures" in 2019

2019-today

Tutor of the PhD candidate Valerii Maksimov in Ingegneria dell'Innovazione Tecnologica Università Telematica internazionale Uninettuno.

2020

I was the supervisor of the following thesis at the University International Telematic Uninettuno:

Candidate: Simone Girardi

Title: Analisi numerica del principio di Saint Venant con software di calcolo agli elementi finiti

Candidate: Antonio Albanese (Master of Science)

Title: STAMPA 3d PER IL CEMENTO ARMATO. La frontiera avanzata di una sfida rivoluzionaria

Candidate: Salvatore Ernesto Maria Alonge (Master of Science)

Title: Le colonne miste acciaio-calcestruzzo: una soluzione alternativa a quelle esistenti sul Mercury Tower di Malta

Candidate: Diletta Boschi

Title: Restauro e risanamento conservativo della Chiesa di S. Albano e della casa parrocchiale di Quinciano (SI)

Candidate: Martina Cassetta (Master of Science)

Title: La cupola tra la Scienza e la Tecnica delle Costruzioni: evoluzione statica e costruttiva con dettaglio della Cupola di San Pietro in Vaticano.

Candidate: Giovanni Cornaro (Master Water Academy)

Title: The evolution of the concept of Sustainability: An overview on the impact of disruptive technologies in our future societies.

Candidate: Simone De Rosa

Title: Problema della propagazione delle onde piane longitudinali in Trave Estensibile e in Trave Pantografica con caso applicativo di dimensionamento attraverso caratteristiche dinamiche assegnate

Candidate: Danilo De Vito (Master of science)

Title: Studio preliminare di un'ipotesi di degrado della diga sul fiume Alaco

Candidate: Filippo Di Nuoscio (Master of science)

Title: Progettazione e valutazione, su costi e sostenibilità, tra tre tipologie di solaio realizzati con: metodo tradizionale, lastre tralicciate Predalles e casseri a perdere U-Boot Beton

Candidate: Antonio Di Nuoscio (Master of science)

Title: Confronto tra progettazione di un telaio realizzato con solai gettati in opera latero-cementizi e con elementi innovativi alleggeriti, i casseri U-Boot Beton. Differenze in termini di dimensioni, costi e sostenibilità

Candidate: Lucia Duca (Master of science)

Title: Stampanti 3D: nuovi scenari applicativi per l'industria delle costruzioni e l'edilizia sostenibile

Candidate: Luca Stefano Giberti (Master of science)

Title: Basilica di Superga: inquadramento nell'architettura barocca torinese, analisi strutturale e delle fasi esecutive, comparazione logistica e sicurezza del cantiere dell'epoca con quelle attuali

Candidate: ANTONY MMBAYA LUMULA (Master Water Academy)

Title: CONSERVING WATER AND REDUCING PRODUCTION COSTS IN THE TEXTILE INDUSTRY: ENHANCING SUSTAINABLE AND RESPONSIBLE DEVELOPMENT

Candidate: Maddalena Lupiano (Master of science)

Title: Calcestruzzo FRC: Progettazione di un edificio in cemento non armato stampabile



Candidate: Maddalena Mastrolorenzo (Master of science)

Title: PROGETTO E VERIFICA STRUTTURALE DI UNA TORRE NELLE DIVERSE ZONE SISMICHE ITALIANE CON COMPARAZIONE DEI COSTI IN RAPPORTO ALLA SICUREZZA SISMICA PREVISTA DALLE NTC

Candidate: Sebastiano Maucieri (Master of science)

Title: VALIDAZIONE DELLE RELAZIONI DI STIMA DI ALCUNE PROVE NON DISTRUTTIVE CON CASO STUDIO

Candidate: Leonardo Mazzi

Title: DIFFERENZE STRUTTURALI E PROGETTUALI DELLE CUPOLE DI CHIESE SITUATE NEL TERRITORIO SENESE

Candidate: Valentina Minozzi (Master of science)

Title: Ottimizzazione topologica di un portale 2D soggetto a forzanti orizzontali e verticali per applicazioni della stampa 3D in edilizia.

Candidate: Gianluigi Palmieri (Master of science)

Title: La Diga del Govossai. Analisi al danneggiamento: l'azione delle acque dilavanti

Candidate: Roberto Pozzi

Title: Sviluppo di un algoritmo di Branch and Bound per il calcolo della resilienza di un sistema di corpi e vincoli

Candidate: Gianluca Sestigiani

Title: Un caso di Consolidamento strutturale: L'intervento sulla Chiesa delle Fonti e una soluzione alternativa

Candidate: Andrea Severino

Title: Dissesto Idrogeologico causato da Alluvioni

Candidate: Alberto Tavolaro (Master of science)

Title: STUDIO COMPARATO DEL COMPORTAMENTO STRUTTURALE E DELLO STATO MANUTENTIVO SOTTO ATTIVITA' SISMICA DI UN CAVALCAVIA E DI UN CAVALCAFERROVIA

## 2020-today

Tutor of the PhD candidate Nasrin Rezaei in Ingegneria dell'Innovazione Tecnologica Università Telematica internazionale Uninettuno.

## 2021

Candidate: Alice Pettinicchio

Title: Studio dei limiti di resistenza al danneggiamento di dighe a gravità

Candidate: Angela Ingalisi

Title: Ottimizzazione topologica per la progettazione di elementi e strutture con possibile applicazione alla fabbricazione additiva

Candidate: Greta Valentino

Title: Stato dell'arte della metodologia LCA (Lifecycle Assessment) e valutazioni sul calcestruzzo fibrorinforzato

Candidate: Sebastiano Vernizzi

Title: Progettazione delle opere di sbarramento e analisi del loro stato di danneggiamento

## Schematic summary of the teaching activities before 2011

Breakdown of academic pursuits for the course and for the role

Title of the course	Role	Number of courses
Dynamics	Assistent/Tutor	<b>1</b>
Structural Mechanics	Assistent/Tutor	<b>1</b>
Scienza delle Costruzioni (ICAR/08)	Assistent/Tutor	4+ <b>2</b> +4+8+ <b>1</b> + <b>3</b> + <b>1</b> + <b>1</b> + <b>1</b>
Statica e dinamica dei sistemi meccanici (ICAR/08)	Assistent/Tutor	<b>1</b>
Tecnica delle Costruzioni (ICAR/07)	Assistent/Tutor	<b>1</b>
Geologia, geodesia e geotecnica (ICAR/09)	Assistent/Tutor	<b>1</b>
Meccanica dei Solidi (ICAR/08)	Assistent/Tutor	2
Aspetti Strutturali dell'Ingegneria Civile (ICAR/08)	Holder of an external contract	<b>3</b>
Aspetti Strutturali dell'Ingegneria Civile (ICAR/08+ICAR/09)	Holder of an external contract	<b>1</b>
Laboratorio di Aspetti Strutturali (ICAR/08)	Holder of an external contract	<b>2</b>
Ingegneria delle Strutture (ICAR/08+ICAR/09)	Holder of an external contract	<b>2</b>
Statics	Holder of an external contract	<b>1</b>
Dynamics	Holder of an external contract	<b>1</b>
Sicurezza delle Strutture (ICAR/08+ING-IND/28)	Holder of an external contract	<b>1</b>

In the above table, the numbers in bold refer to courses for which I received a financial reward.

Breakdown of academic pursuits for roles and economic treatment.

Ownership of external contracts (with financial compensation)	Role of assistance (with financial compensation)	Role of assistance (without financial compensation)

$3+1+2+2+1+1+1=11$	$1+1+2+4+1+3=12$	$4+8+1+1+1+1+1+1+2=20$
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Correlator of the 3 dissertations before 2011.

## Schematic summary of the teaching activities after 2011

**Relator of 95 dissertations (of which, 30 Master of Science) after 2011.** In particular, 2021: 4 candidates (of which 2 Master of science); 2020: 23 candidates (of which 15 Master of science); 2019: 14 candidates (of which, 6 Master of Science); 2018: 10 candidates (of which, 1 Master of Science); 2017: 17 candidates (of which, 5 Master of Science);, 2016: 6 candidates (of which, 1 Master of Science); 2015: 7 candidates; 2014: 5 candidates; 2013: 4 candidates; 2012: 5 candidates.

Besides, I show in the following table (with the help of the subsequent legend) the didactic activities (i.e., 20 courses as a professor and 71 as a tutor) for the International Telematic University UNINETTUNO.

Years	A1,A1	B1,B2	C	D	E	F	G	G1	G2	H	I	L	Total
2011/12	T	T				T	T		T				
2012/13	T	T				T	T		T				
2013/14	T	PT				T	T		T				
2014/15	T	PT	PT			T	T		T	T	T	T	
2015/16	PT	T	PT	PT	PT	T*	T	T	T	T	T	T*	
2016/17	PT	T	PT	PT	PT	T*	T	T	T	T	T	T*	
2017/18	PT	T	PT	P	PT		T^	T^	T^	T	T^		
2018/19	PT	T	PT		PT					T			
2019/20	PT	T	PT		PT	P				T			
2020/21	PT	T	PT		PT	P				T			
Total T	20	20	7	2	6	6	7	3	7	7	4	3	91
Total P	12	4	7	3	6	2	0	0	0	0	0	0	35

Legend:

- A1: Statics and dynamics of mechanical systems (Statica e dinamica dei sistemi meccanici) for the undergraduate degree in Civil and Environmental Engineering
- A2: Elements of rational mechanics (Elementi di meccanica razionale) for the undergraduate degree in Civil and Environmental Engineering
- B1,B2: Structural mechanics (Scienza delle costruzioni) for the undergraduate degree in Civil and Environmental Engineering and in Engineering Management
- C: Structural mechanics II (Scienza delle costruzioni II) for the graduate degree in Civil Engineering
- D: Methods and models of mechanical structures (Metodi e modelli di meccanica strutturale) for the undergraduate degree in Civil and Environmental Engineering
- E: [Architectural and ]structural design (Progettazione [architettónica e ]strutturale) for the undergraduate degree in Civil and Environmental Engineering.
- F: Strength of materials (Tecnica delle Costruzioni) for the undergraduate degree in Civil and Environmental Engineering
- G: Geology, geodesy and geotechnics (Geologia geodesia e geotecnica) for the undergraduate degree in Civil and Environmental Engineering
- G1: Geology and geotechnics (Geologia geodesia e geotecnica) for the undergraduate degree in Civil and Environmental Engineering
- G2: Geotechnics (Geotecnica) for the undergraduate degree in Civil and Environmental Engineering
- H: Dynamics and seismic engineering (Dinamica e ingegneria sismica) for the graduate degree in Civil Engineering

I: Tunneling (Ingegneria delle gallerie e delle fondazioni) for the graduate degree in Civil Engineering

L: Theory and design of reinforced and prestressed structures (Teoria e progetto delle costruzioni in c.a. e in c.a.p.) for the graduate degree in Civil Engineering

P: Professor

T: Tutor

PT: Professor and tutor

T\*: Tutor with Prof. Alessandro Fantilli

T^: Tutor with dott. Andrea Tomassi

# Academic degrees

## Habilitations

In 2020 I got the habilitation to become Full Professor both in Structural Mechanics (from 14/1/2020 to 14/1/2029) and Mathematical physics (from 9/11/2020 to 9/11/2029) in Italy.

In 2018 I got the habilitation to become Associate Professor in Structural Mechanics in Italy

In 2016, I got the French habilitation HDR with a thesis called: “Enhanced continuum mechanics”.

I got the Italian habilitation to become associate professor in the group of Mathematical Physics from 2014 to 2020

## Career

In 2001, Degree in Physics from the University of Naples *Federico II* (with a score of 110/110 cum laude), working with Prof. A. Romano on a thesis entitled *On some applications of linear elasticity and nonlinear*.

In 2002, Master of Science in Mechanical Engineering (Engineering Science and Mechanics [ESM] department) of the *Virginia Polytechnic Institute and State University*, working with Prof. R. Batra on a thesis entitled *Solution of Saint-Venant Problem and Almansi-Michell*.

Hyperlink to the thesis: <http://scholar.lib.vt.edu/theses/available/etd-10212002-043618/>

Phd in Mechanik, with distinction, with a thesis titled *Thermodynamically Consistent Formulation of Induced Anisotropy in Polar Ice Accounting for Grain Rotation, Grain-size Evolution and Recrystallization* with the supervisor prof. K. Hutter. PhD at the Mechanic department of the Technische Universität Darmstadt the 17/11/2004. The hyper link of the thesis: <http://tuprints.ulb.tu-darmstadt.de/epda/000614/>

PhD in Theoretical and Applied Mechanics with a thesis entitled *Microstructured Continua treated by Theory of Mixtures* with advisor Prof. dell’Isola and at the Department of Mechanical Engineering and Aeronautics University La Sapienza in Rome on 13/02/2006.

Holder of Research Fellowship (for grouping ICAR / 08 Structural mechanics [scienza delle costruzioni]) at the Department of Structural and Geotechnical Engineering from 2005 to 2009 entitled: Smart Structures: Modeling and control methods of the response and the role of structural integrity (*Strutture Intelligenti: Modellazione e metodi per il controllo della risposta e dello stato di integrità strutturale*). Scientific responsibility: prof. F. dell’Isola.

In 2009, I was the owner of a scholarship at the Department of Structural and Geotechnical Engineering titled Nonlinear dynamics of bodies subject to continuous impact (*Dinamica nonlineare di corpi continui soggetti a impatto*) working with Prof. U. Andreaus.

I was the holder of a Research Fellowship (for clusters disciplinary ICAR / 08 Construction Science, MAT / 07 and FIS / 01) at the Department of structures at the University of Rome “Roma Tre” from 2009 to 2010. Title: From active and passive vibration control in structural elements

using piezoelectric networks: modeling, synthesis and experimental development. Scientific director Prof. N. Rizzi.

I have won in 2010 the competition for a position as Assistant Professor for grouping Scientific Discipline of Mechanics of Structures (Scienza delle Costruzioni) at the Faculty of Engineering of the International Telematic University UNINETTUNO.

In May 2011 I have become Assistant Professor (Ricercatore a tempo indeterminato) for grouping Scientific Discipline of Mechanics of Structures (Scienza delle Costruzioni) at the Faculty of Engineering of the International Telematic University UNINETTUNO.

From 2017, I am a member of the Doctoral School in Mathematics and models (membro del Collegio dei Docenti del Dottorato in Metodi e Modelli dell'Università degli Studi dell'Aquila) of the University of L'Aquila.

In June 2019 I have become Associate Professor for grouping Scientific Discipline of Mechanics of Structures (Scienza delle Costruzioni) at the Faculty of Engineering of the International Telematic University UNINETTUNO.

### Post-Lauream courses

In 2003 I attended at two post-lauream courses:

- *Moving discontinuities in crystalline solids* presso il CISM (International Centre for Mechanical Sciences) di Udine. Hyperlinkal corso: <http://www.cism.it/courses/c0302/>
- Scuola estiva di Fisica Matematica (summer school in mathematical physics) di Ravello. Hyperlink al corso: <http://www.altamatematica.it/storico/gnfm/ravello/ravello03.html>

In 2004 I attended at two post-lauream courses:

- *Applied Micromechanics of Porous Materials* presso il CISM (International Centre for Mechanical Sciences) di Udine. Hyperlinkal corso: <http://www.cism.it/courses/c0407/>
- Surface Waves in Geomechanics: Direct and Inverse Modeling for Soils and Rocks” presso il CISM (International Centre for Mechanical Sciences) di Udine. Hyperlinkal corso: <http://www.cism.it/courses/c0408/>

In 2005 I attended at the following post-lauream course:

- “Dynamic Methods for Damage Detection in Structures” presso il CISM (International Centre for Mechanical Sciences) di Udine. Hyperlinkal corso: <http://www.cism.it/courses/c0513/>

In 2006 I attended at the following post-lauream course:

- Scuola estiva di Fisica Matematica di Ravello. Hyperlinkal corso: <http://www.altamatematica.it/storico/gnfm/ravello/ravello06.html>

In 2010 I attended at two post-lauream courses:

- *Variational Models and Methods in Solid and Fluid Mechanics* at CISM (International Centre for Mechanical Sciences) in Udine. Hyper link to the course: <http://www.cism.it/courses/C1006/>

The lectures of this course has been recorded and uploaded at the following link:

[https://www.youtube.com/results?search\\_query=cism](https://www.youtube.com/results?search_query=cism)



- *Exploiting Nonlinear Behaviour in Structural Dynamics* at CISM (International Centre for Mechanical Sciences) in Udine. Hyper link to the course: <http://www.cism.it/courses/C1009/>

In 2011 I attended at the following post-lauream course:

- *Atomistic and continuum descriptions of microstructures* at the First Sperlonga Summer School on Mechanics and Engineering Sciences. Hyper link to the course: <http://www.memocsevents.eu/wordpress/sperlonga2011/>

In 2013 I attended at the following post-lauream course:

- *Dynamics, Stability and Control of Flexible Structures* at the Third Sperlonga Summer School on Mechanics and Engineering Sciences. Hyper link to the course: <http://www.memocsevents.eu/sperlonga2013/>

In 2015 I taught at the

- Inaugural Summer School on Mechanics of generalized continua and their applications to engineering materials and structures. 20-26 July 2015, Arpino, Italy

In 2016 I attended at the following post-lauream course:

- Alghero Summer School on “Elastic Metamaterials: From Theory to Applications” 22-29 May 2016, Alghero, Italy. Hyper link to the course: <http://www.memocsevents.eu/wordpress/cossevita/alghero-summer-school/>

and I taught at the following post lauream course

- The CNRS International Associate Laboratory Coss&Vita, The Paris Federation of Mechanics Labs and The International Center M&MoCS organize an Arpino School on “Models of Generalized Continua characterized by Quasi-Inextensible Fibrous Structures: New Ideas for Models and Applications” that took place in Arpino (FR), Italy, 19-23 September 2016. Click [here](#) to visit website: <http://www.memocsevents.eu/wordpress/cossevita/g-school-arpino-program/>. The program is [here](#): <http://www.memocsevents.eu/wordpress/cossevita/wp-content/uploads/2016/09/Programma-Arpino-settembre-2016.pdf>

In 2017 I participated and I taught at the following

- post lauream course from 29/5/2017 to 2/6/2017. Name of the course: “Energy methods in the mechanics of metamaterials”. Place: Warsaw university of Technology. Hyper link: <https://www.wip.pw.edu.pl/Aktualnosci/Kurs-Energy-methods-in-the-mechanics-of-metamaterials>

In 2018 I participated and I taught at the following

- I participated and I taught at the following post lauream course from 5/3/2018 to 16/3/2018. Name of the course: “**Structure stability**”. Place: Warsaw university of Technology
- I taught at the following post lauream course from 9/7/2018 to 13/7/2018. Name of the course: “**Mechanics of Fibrous Materials and Application: Physical and Modelling Aspects**”. Place: CISM - International Centre for Mechanical Sciences
- I gave 6-hours lectures from the 1<sup>st</sup> to the 7<sup>th</sup> of February 2018 within the doctoral school in Mathematics and models of the University of L’Aquila titled “Variational derivation of continuum mechanics equations”.

In 2019 I participated and I taught at the following

- I gave 10-hours lectures (with Prof. Francesco dell'Isola) within the doctoral school in Mathematics and models of the University of L'Aquila titled "Variational derivation of continuum mechanics equations".

In 2020 I participated and I taught at the following

- I gave 10-hours lectures (with Prof. Francesco dell'Isola and Dr. Emilio Barchiesi) within the doctoral school in Mathematics and models of the University of L'Aquila titled "Variational derivation of continuum mechanics equations".

## Financed research projects

Year: 2002. Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A024010. Title of the research: Modellazione dei fenomeni di dilatanza in matrici solide sature di fluido. Scientific responsible: DELL'ISOLA Francesco

Year: 2003. Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A039125. Title of the research: Modellazione dei fenomeni di dilatanza in matrici solide sature di fluido per mezzo di teorie con micro-struttura. Scientific responsible: DELL'ISOLA Francesco

Year: 2004. Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A045073. Title of the research: Analisi di stabilità di cavità saline basata su diversi modelli di mezzo poroso. Scientific responsible: DELL'ISOLA Francesco

Year: 2005. Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A050779. Title of the research: Modelli generalizzati di consolidamento nell'ambito di teorie poromeccaniche di secondo gradiente. Scientific responsible: DELL'ISOLA Francesco

Year: 2006. Ricerca di Ateneo, Università di Roma "La Sapienza" - prot. C26A06KXXKX. Title of the research: Modelli di continui porosi: teoria poromeccanica di secondo gradiente per lo studio dei fenomeni di consolidazione. Scientific responsible: DELL'ISOLA Francesco

Years: 2006-2008. PRIN2005, Protocollo: 2005094847\_003. Title: Modellazione e controllo delle incertezze in strutture intelligenti: controllo. Coordinatore scientifico: SESTIERI Aldo. Scientific responsible: DELL'ISOLA Francesco

Year: 2007. Progetti di Ricerca di Università, Università di Roma "La Sapienza" - prot. C26A07MLAH. Title of the research: Modelli poromeccanici di secondo gradiente dei processi di liquefazione dei suoli: i vulcani di fango. Scientific responsible: DELL'ISOLA Francesco

Year: 2007. Progetti di Ricerca di Università, Università di Roma "La Sapienza" - prot. C26A07TELB. Title of the research: Analisi del danno in materiali e strutture artificiali e biologiche. Scientific responsible: ANDREAUS Ugo

Year: 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

Year: 2008. Domanda di finanziamento Ricerca dell'Ateneo Federato della Scienza e della Tecnologia AST Progetto coordinato dell'Ateneo Federato - prot. C26F08NYTM. Title of the research: Analisi del danno nelle biostrutture e nelle strutture biologiche. Scientific responsible: ANDREAUS Ugo

Year 2008: Progetti di Ricerca di Università, Università di Roma "La Sapienza" - prot. C26A08E7B3. Title of the research: Analisi e identificazione degli stati limite di stabilità e danno meccanico nei materiali e nelle strutture in vista dell'ottimizzazione. Scientific responsible: Giuseppe Ruta.

Year 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

Year 2009: Progetti di Ricerca di Università, Università di Roma "La Sapienza" - prot. C26A098Y5S. Title of the research: Analisi e identificazione degli stati limite di stabilità e danno meccanico nei materiali e nelle strutture in vista dell'ottimizzazione. Scientific responsible: Giuseppe Ruta.

Year 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

Year 2010: Progetti di Ricerca di Università, Università di Roma "La Sapienza" - prot. C26A10NHW3. Title of the research: Analisi, identificazione e ottimizzazione di materiali e strutture nei confronti di stati limite di stabilità e danno meccanico. Scientific responsible: Giuseppe Ruta.

Year 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

Years: 2011-2013. PRIN 2009 Protocollo: 200959L72B\_003. Title: Tessuti Biologici e Materiali Soffici Attivi: Modelli Matematici e Problemi. Scientific Coordinator: SACCOMANDI Giuseppe. Scientific responsible: TERESI Luciano

Year 2014-15: The International Center M&MoCS and the Warsaw University of Technology organized two courses for Polish students. The first course was held at Palazzo Caetani in Cisterna di Latina, from 30th June to 11th July 2014 with the title: "*Introduction to Analytical Continuum Mechanics and Computational Mechanics*". The second course was held in Giuliano di Roma (FR), Italy, from 22nd February to 7th March 2015. The title: "*Introduction to Analytical Continuum Mechanics and Computational Mechanics. Part II*". For the organization of this events I had a budget of €15000.

Years: 2014-2018. I have the scientific responsibility of the following research grant amounting to €10000. Title: Effetti della caduta massi su costruzioni e infrastrutture civili e industriali. The grant was financed by Politecnico di Torino based on a grant of the Valle d'Aosta Region.

Year 2015: Giuseppe Rosi and myself were the responsible of a grant of €2500. The costs for this grant have been taken by the CNRS International Associate Laboratory Coss&Vita. The subject of the study was the derivation of the equations of motion of an implant-bone interphase.

Years 2015-2018: I was involved in the project LPEB: Licence professionnelle en formation ouverte et à distance pour la performance énergétique et environnementale des bâtiments en Fédération de Russie, en Chine et en Azerbaïdjan n. 561732-EPB-1-2015-1-FR-EPPKA2-CBHE-JP, financed by the program Erasmus+ Capacity building in Higher Education from 15/10/2015 to 15/10/2018

Year 2016: Giuseppe Rosi and myself were the responsible of a grant of €2000. The costs for this grant have been taken by the CNRS International Associate Laboratory Coss&Vita. The subject of

the study has been the second step of the derivation of the equations of motion of an implant-bone interphase.

Years 2018-2019: scientific responsibility of the research contract for the project AI4BS – POR FESR LAZIO – AVVISO BIOEDILIZIA E SMART BUILDING. The grant has been equal to €13626.83+iva.

Years 2018-2021: scientific responsibility of the research contract titled: “Modellazioni analitiche del degrado” for the RESBA project (from Politecnico di Torino). The grant will be of €13360.66 +iva.

Years 2019-2021: Participation to the project “3D printing in VET - n. 2019-1-EL01-KA202-062909” financed by the program Erasmus+ Strategic Partnership – Cooperation for innovation and the exchange of good practices. From 01/10/2019 to 30/09/2021.

Year 2020: Participation to the project “NET - ScieNce Together”. Participation at the European research night with a talk for the Italian national TV Raiplay

Years 2020-2022: Participation to the project “Destinazione Comune”. Fondo Asilo, Migrazione e Integrazione (FAMI) Annualità di riferimento 2014-2020

Thus, I was involved in 21 financed research projects as a participant and in further 6 research projects with the scientific responsibility

In the following table the scheme for those financed projects I was involved as a participant

<b>Name</b>	<b>Years</b>
Ricerca di Ateneo, Università di Roma "La Sapienza"	2002, 2003, 2004, 2005 and 2006
Ricerca di Università, Università di Roma "La Sapienza"	2007, 2007, 2008, 2008, 2009, 2009, 2010
Ricerca dell'Ateneo Federato	2008
Ricerche UNIVERSITARIE	2010, 2011
PRIN	2006-2008, 2011-2013
LPEB: Licence professionnelle en formation ouverte et à distance pour la performance énergétique et environnementale des bâtiments en Fédération de Russie, en Chine et en Azerbaïdjan	2015-2018
3D printing in VET	2019-2021
NET - ScieNcE Together	2020
“Destinazione Comune”. Fondo Asilo, Migrazione e Integrazione (FAMI)	2020-2022

In the following table the scheme for those financed projects I took the scientific responsibility

<b>Name</b>	<b>years</b>	<b>Money</b>
M&MoCS events organization	2014-2015	€15000
Politecnico di Torino (based on a grant of the Valle d’Aosta Region)	2014-2018	€10000
CNRS International Associate Laboratory Coss&Vita	2015, 2016	€2500 and €2000
POR FESR LAZIO – AVVISO BIOEDILIZIA E SMART BUILDING	2018-2019	€13626.83+iva
RESBA project (Poitecnico di Torino)	2018-2021	€13360.66 +iva

# Scientific activities

## Key words of the scientific activity

Modelling microstructured continua, continuum mechanics, second gradient 3D and 2D continua. Variational approach, variational approach to derive field theories, propagation of bulk (transversal and longitudinal) waves, dispersion relation, influence of pre-stress.

Nonlinear dynamics of systems constituted by moving components that make intermittent contacts with each other. Impact mechanics.

Consequence based structural design, robust structures, compartmentalized structures.

Theory of mixtures, recrystallization, dislocation density. Ionic polymer metal composite (IPMC), numerical simulations of IPMC, fluid saturated porous media, polycrystalline materials, dynamics of polycrystalline materials, anisotropic constitutive laws, incompressible polycrystalline materials, orientation distribution function (ODF), numerical simulations.

Scientific activity (418 characters)

Microstructured continua. Continuum Mechanics. Structural mechanics. Dynamics of structures. Vibration control. Band gap. Theory of Mixtures. Ionic polymer metal composite (IPMC). Polycrystalline materials. Anisotropy. Soil mechanics. Numerical simulations. Second Gradient Continua. Nonlinear dynamics. Robust structures. Damage mechanics. Plasticity. Variational approach to derive field theories. Wave propagation.

## Reviewer's activities for journals and institutions

I am reviewer for the following journals

From 2007: Research in Nondestructive Evaluation.

From 2010: Physica D.

From 2011: ZAMM e Entropy.

From 2012: Continuum mechanics and thermodynamics, Journal of Glaciology and Mathematical review.

From 2013: Archive of Applied Mechanics, Meccanica, Mathematics and Mechanics of Solids, Computers in Biology and Medicine, Mathematics and Mechanics of Complex Systems.

From 2014: Nonlinear Dynamics.

From 2015: Acta Mechanica, Biomechanics and Modeling in Mechanobiology, European Journal of Environmental and Civil Engineering.

From 2016: Control of Nonlinear Systems, Journal of Engineering Mathematics, Journal of Computational, Nonlinear Dynamics, The Open Construction & Building Technology Journal and International Journal of Thermophysics.

From 2017: Advances in Mechanical engineering, The Journal of the Acoustical Society of America, Applied Mathematical Modeling (APM), Computational Materials Science, Journal of Applied Mechanics, Proceedings of the Royal Society A (Mathematical, physical and engineering sciences), Microelectronic Engineering (MEE), Mathematical Problems in Engineering, Journal of Intelligent Material Systems and Structures (JIM) and International Journal of Non-Linear Mechanics (NLM).

From 2018: Materials and Design, International Journal of Mechanical Sciences

From 2019: Mathematical and Computational Applications, Journal of Packaging Technology and Research, Journal of Mechanical Engineering Science (JMES), Physica Status Solidi B: Basic Solid State Physics

From 2020: Journal of Elasticity, International Journal of Disaster Risk Science and Journal of Composite materials, Techno-press.

From 2021: Ultramicroscopy, Mathematics and Computers in Simulations (MATCOM), High Temperature Materials and Processes, Scientific reports.

From 2017 I am an Independent External Experts reviewer for COST, European Cooperation in Science and Technology.

In 2021 I was Reviewer for VQR (Research quality assessment from ANVUR, that is the Italian National Agency for the evaluation of universities and research institutes) 2015-2019.

### Editor's activities

I was an editor of a special issue for Mathematics and Mechanics of Solids in 2016: Victor A. Eremeyev, Alexey V. Porubov, Placidi L. (2016). Special Issue in Honor of Eron L Aero. MATHEMATICS AND MECHANICS OF SOLIDS, vol. 21, p. 3-5, ISSN: 1081-2865, doi: 10.1177/1081286515588690

From 2016: I am the coordinator of the first deliberative committee “Control and Representation” of the International research center “Mathematics and Mechanics Of Complex Systems” (M&MOCS). See also the hyperlink: [http://memocs.univaq.it/?page\\_id=379](http://memocs.univaq.it/?page_id=379)

I was guest editor for Mechanics Research Communications (MRC) in 2017 and with professors Anil Misra and Takashi Matsushima a special issue titled “Granular Material Models across Scales” to appear in the early part of 2018 for the Journal

I am in the editorial board of “Nanomechanics Science and Technology: An International Journal” Hyperlink: <http://www.begellhouse.com/journals/nanomechanics-science-and-technology/editorial.html>

I am a member of the Editorial Board of the periodical academic journal “Vestnik of Tomsk State University of Architecture and Building”. Hyperlink: [http://www.tsuab.ru/en/research/vestnik/editorial\\_board/](http://www.tsuab.ru/en/research/vestnik/editorial_board/)

I am a member of the Editorial Board of the periodical academic journal “BMC Mechanical Engineering”. Hyperlink: <https://bmcmecheng.biomedcentral.com/about/editorial-board>

I am a member of the Editorial Board of the periodical academic journal “Continuum Mechanics and thermodynamics”. Hyperlink: <https://www.springer.com/physics/classical+continuum+physics/journal/161?detailsPage=editorialBoard>

I am editor of the following journal from 2019: The Russian Automobile and Highway Industry Journal

### Managing's activities and memberships of scientific committee for conferences



I am the coordinator of those researchers of the International Telematic University Uninettuno that are affiliated to the International research center “Mathematics and Mechanics Of Complex Systems” (M&MOCS)

I am the coordinator (see also the website <https://f2m.cnrs.fr/le-laboratoire/irp-cossvita/research-groups/elasto-dynamics-of-microstructured-media-eladyn/>) of the Elasto-Dynamics of Microstructured Media (ELADYN) group International Research Project (IRP) Coss&Vita

In 2021, Participation in the commission for the recruitment of the PhD exam in “Matematica e Modelli”.

In 2021, Participation in the commission for the recruitment of one associate professor at the Department of “Architettura e Disegno Industriale” of the University “Università degli Studi della Campania “Luigi Vanvitelli”.

From 2020: I am a member of the Scientific committee of the International research center “Mathematics and Mechanics Of Complex Systems” (M&MOCS). See also the hyperlink: [http://memocs.univaq.it/?page\\_id=333](http://memocs.univaq.it/?page_id=333)

Member of the Scientific Committee of the 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

# Complete list of publications

## Complete list of publications for journals

2005

Journal: **Annals of Glaciology**, **39 pp. 49-52, 2005.**

Title: On the role of grain growth, recrystallization and polygonization in a continuum theory for anisotropic ice sheets.

Authors: Luca Placidi, Sérgio H. Faria and Kolumban Hutter.

[doi: 10.3189/172756404781814410](https://doi.org/10.3189/172756404781814410)

Publisher and place of publication: International Glaciological Society, Cambridge, ISSN 0260-3055, Online ISSN: 1727-5644.

2006

Journal: **GAMM-Mitteilungen**, **29(1) pp. 80-117, 2006,**

Title: A Critical Review of the Mechanics of Polycrystalline Ice.

Authors: Luca Placidi, Kolumban Hutter and Sérgio H. Faria.

Publisher and place of publication: GAMM-Mitteilungen (GAMM-Reports) (PAMM). WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. Print ISSN: 0936-7195

Hyperlinkalla Journal: <http://www3.interscience.wiley.com/journal/60500232/home>

Journal: **Continuum Mechanics and Thermodynamics**, **17(6) pp. 409-451, 2006,**

Title: Thermodynamics of Polycrystalline materials treated by the Theory of Mixtures with Continuous Diversity.

Authors: Luca Placidi and Kolumban Hutter.

[doi: 10.1007/s00161-005-0006-1](https://doi.org/10.1007/s00161-005-0006-1)

Publisher and place of publication: Springer Berlin / Heidelberg ISSN0935-1175 (Print) 1432-0959 (Online).

Journal: **Z. Angew. Math. Phys.**, **57(1) pp. 160-181, 2006,**

Title: An Anisotropic Flow Law for Incompressible Polycrystalline Materials.

Authors: Luca Placidi and Kolumban Hutter.

[doi: 10.1007/s00033-005-0008-7](https://doi.org/10.1007/s00033-005-0008-7)

Publisher and place of publication: ISSN: 0044-2275. Birkhäuser, Basel.

2008

Journal: **European Journal of Mechanics / A Solids**, **7(4), pp. 582-606 (2008),**

Authors: Luca Placidi, Francesco dell'Isola, Nicoletta Ianiro e Giulio Sciarra.

Title: Variational Formulation of pre-stressed solid-fluid mixture theory, with an application to wave phenomena.

[doi:10.1016/j.euromechsol.2007.10.003](https://doi.org/10.1016/j.euromechsol.2007.10.003)

Publisher and place of publication: Elsevier Masson SAS, ISSN 0997-7538.

Journal: **Smart Materials and Structures**, **17(4), (045010) 14pp, 2008.**

Authors: Giovanni Del Bufalo, Luca Placidi, Maurizio Porfiri.

Title: A mixture theory framework for modeling mechanical actuation of ionic polymer metal composites.

[doi:10.1088/0964-1726/17/4/045010](https://doi.org/10.1088/0964-1726/17/4/045010)

Publisher and place of publication: IOP, Bristol. Publisher: Natasha Leeper

The work has been included in the most downloaded articles published in 2008 by the journal Smart Materials and Structured: "Smart Materials and Structures 2008 collection"

Journal: **Journal of Glaciology**, **54(187)**, pp. **631-642**, **2008**.

Authors: Hakime Seddik, Ralf Greve, Luca Placidi, Ilka Hamann, Olivier Gagliardini.

Title: Application of a continuum-mechanical model for the flow of anisotropic polar ice to the EDML core, Antarctica.

Hyperlink alla Journal: <http://www.ingentaconnect.com/content/igsoc/jog>

Publisher and place of publication: International Glaciological Society, Cambridge.

2009

Authors: Hakime Seddik, Ralf Greve, Thomas Zwinger, Luca Placidi.

Title: A full-Stokes ice flow model for the vicinity of Dome Fuji, Antarctica, with induced anisotropy and fabric evolution.

Journal di discussione: **The Cryosphere Discuss.**, 3, 1–31, 2009

Hyperlink: <http://www.the-cryosphere-discuss.net/3/1/2009/>

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The Cryosphere Discussions is the access reviewed discussion forum of The Cryosphere

The paper was published later even on the journal

Journal: **The Cryosphere**, 5, 495-508, 2011

Collegamento ipertestuale: [www.the-cryosphere.net/5/495/2011/](http://www.the-cryosphere.net/5/495/2011/)

doi:10.5194/tc-5-495-2011

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2010

Authors: Placidi, Luca; Greve, Ralf; Seddik, Hakime; Faria, Sérgio H.

Title: Continuum-mechanical, Anisotropic Flow model, based on an anisotropic Flow Enhancement factor.

Journal: **Continuum Mechanics and Thermodynamics**, **22(3)**, pp. 221-237

[doi:10.1007/s00161-009-0126-0](https://doi.org/10.1007/s00161-009-0126-0)

Publisher and place of publication: Springer Berlin / Heidelberg. ISSN0935-1175

Authors: Ugo Andreaus, Luca Placidi, Giuseppe Rega.

Title: Numerical simulation of the soft contact dynamics of an impacting bilinear oscillator

Journal: **Communications in Nonlinear Science and Numerical Simulations**, **15(9)** pp. 2603-2616.

[doi:10.1016/j.cnsns.2009.10.015](https://doi.org/10.1016/j.cnsns.2009.10.015)

Editor: ELSEVIER. ISSN: 1007-5704

2011

Journal: THE CRYOSPHERE, vol. 5, p. 495-508, ISSN: 1994-0416, doi: 10.5194/tc-5-495-2011

Authors: Hakime Seddik, Ralf Greve, Thomas Zwinger, Placidi L (2011).

Title: A full-stokes ice flow model for the vicinity of dome fuji, antarctica, with induced anisotropy and fabric evolution.

Journal: **Journal of Intelligent Material Systems and Structures**, **22(16)**, pp. **1887-1897** (2011).

doi:10.1177/1045389X11417195

Authors: Paola Nardinocchi, Matteo Pezzulla, Luca Placidi.

Title: Thermodynamically-Based Multiphysic Modeling of Ionic Polymer Metal Composites

Journal: **Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science**, 225(10) 2444-2456, 2011

doi:10.1177/0954406211414484

Authors: Ugo Andreaus, Luca Placidi, Giuseppe Rega.

Title: Soft impact dynamics of a cantilever beam: equivalent SDOF model versus infinite-dimensional System

## 2012

Journal: **ZEITSCHRIFT FUR ANGEWANDTE MATHEMATIK UND MECHANIK**, vol. 92, p. 52-71, ISSN: 0044-2267, doi: 10.1002/zamm.201100022

Authors: dell'Isola Francesco, Madeo Angela, Placidi L (2012).

Title: Linear plane wave propagation and normal transmission and reflection at discontinuity surfaces in second gradient 3D continua.

## 2013

Journal: **JOURNAL OF APPLIED PHYSICS**, vol. 113(22), article number 224302, (2013).

ISSN: 0021-8979, doi: 10.1063/1.4808446

Authors: Ugo Andreaus, Placidi L, Giuseppe Rega

Title: Microcantilever dynamics in tapping mode atomic force microscopy via higher eigenmodes analysis.

Journal: **Continuum mechanics and thermodynamics**, vol. 25, p. 375-398, (2013).

Authors: Ugo Andreaus, Bernardino Chiaia, Luca Placidi.

Title: Soft impact dynamics of deformable bodies

ISSN: 0935-1175, doi: 10.1007/s00161-012-0266-5

## 2014

Patrizio Neff, Ionel-Dumitrel Ghiba, Angela Madeo, Placidi L, Giuseppe Rosi (2014). A unifying perspective: the relaxed linear micromorphic continuum. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 26, p. 639-681, ISSN: 0935-1175, doi: 10.1007/s00161-013-0322-9

Cesarano, C., Cennamo, G.M., Placidi L (2014). Humbert polynomials and functions in terms of Hermite polynomials towards applications to wave propagation. **WSEAS TRANSACTIONS ON MATHEMATICS**, vol. 13, p. 595-602, ISSN: 1109-2769

Clemente Cesarano, Gerardo Maria Cennamo, Placidi L (2014). Operational Methods for Hermite Polynomials with Applications. **WSEAS TRANSACTIONS ON MATHEMATICS**, vol. 13, p. 925-931, ISSN: 1109-2769

Placidi L, Giuseppe Rosi, Ivan Giorgio and Angela Madeo (2014). Reflection and transmission of plane waves at surfaces carrying material properties and embedded in second gradient materials. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 19, p. 555-578, ISSN: 1081-2865, doi: 10.1177/1081286512474016

Angela Madeo, Giuseppe Rosi, Placidi L (2014). Towards the design of meta-materials with enhanced damage sensitivity: second gradient porous materials.. **RESEARCH IN NONDESTRUCTIVE EVALUATION**, vol. 25, p. 99-124, ISSN: 0934-9847, doi: 10.1080/09349847.2013.853114

## 2015

Antonio Rinaldi, Placidi L (2015). A microscale second gradient approximation of the damage parameter of quasi-brittle heterogeneous lattices. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK**, vol. 94, p. 862-877, ISSN: 0044-2267, doi: DOI: 10.1002/zamm.201300028

Placidi L (2015). A variational approach for a nonlinear 1-dimensional second gradient continuum damage model. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 27, p. 623-638, ISSN: 0935-1175, doi: 10.1007/s00161-14-0338-9

dell'Isola Francesco, Andreaus Ugo, Placidi L (2015). At the origins and in the vanguard of peridynamics, non-local and higher gradient continuum mechanics. An underestimated and still topical contribution of Gabrio Piola. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 20, p. 887-928, ISSN: 1081-2865, doi: 10.1177/1081286513509811

A. Madeo, P. Neff, I.-D. Ghiba, Placidi L, G. Rosi (2015). Band gaps in the relaxed linear micromorphic continuum. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK**, vol. 95, p. 880-887, ISSN: 1521-4001, doi: 10.1002/zamm.201400036

Bernardino Chiaia, Oleg Kumpyak, Placidi L, Valerii Maksimov (2015). Experimental analysis and modelling of two-way reinforced concrete slabs over different kinds of yielding supports under short-term dynamic loading. **ENGINEERING STRUCTURES**, vol. 96, p. 88-99, ISSN: 0141-0296, doi: doi:10.1016/j.engstruct.2015.03.054

Placidi L, Ugo Andreaus, Alessandro Della Corte, Tomasz Lekszycki (2015). Gedanken experiments for the determination of two-dimensional linear second gradient elasticity coefficients. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND PHYSIK**, vol. 66, pp. 3699-3725, ISSN: 0044-2275, doi: 10.1007/s00033-015-0588-9

Claudia Cennamo, Bernardino Chiaia, Valerio De Biagi, Placidi L (2015). Monitoring and compartmentalized structures. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK**, vol. 95, p. 1-11, ISSN: 1521-4001, doi: 10.1002/zamm.201300091

Ghiba Ionel-Dumitrel, Neff Patrizio, Madeo Angela, Placidi L, Rosi Giuseppe (2015). The relaxed linear micromorphic continuum: existence, uniqueness and continuous dependence in dynamics. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 20, p. 1171-1197, ISSN: 1081-2865, doi: 10.1177/1081286513516972

Angela Madeo, Patrizio Neff, Ionel-Dumitrel Ghiba, Placidi L, Giuseppe Rosi (2015). Wave propagation in relaxed micromorphic continua: modelling metamaterials with frequency band-gaps. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 27, p. 551-570, ISSN: 0935-1175, doi: 10.1007/s00161-013-0329-2

## 2016

Placidi L, Emilio Barchiesi, Emilio Turco, Nicola Luigi Rizzi (2016). A review on 2D models for the description of pantographic fabrics. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND PHYSIK**, vol. 67, p. 1-20, ISSN: 0044-2275, doi: 10.1007/s00033-016-0716-1

Placidi L, Leopoldo Greco, Sara Bucci, Emilio Turco, Nicola Luigi Rizzi (2016). A second gradient formulation for a 2D fabric sheet with inextensible fibres. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND PHYSIK**, vol. 67, 114, ISSN: 0044-2275, doi: 10.1007/s00033-016-0701-8

Placidi L (2016). A variational approach for a nonlinear one-dimensional damage-elasto-plastic second-gradient continuum model. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 28, pp. 119-137, ISSN: 0935-1175, doi: 10.1007/s00161-014-0405-2

A. R. El Dhaba , A. F. Ghaleb, Placidi L (2016). Deformation of an elastic magnetizable square rod due to a uniform electric current inside the rod and an external transverse magnetic field.. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 21, pp. 222-241, ISSN: 1081-2865, doi: 10.1177/1081286515582872

Ugo Andreaus, Paolo Baragatti, Placidi L (2016). Experimental and numerical investigations of the responses of a cantilever beam possibly contacting a deformable and dissipative obstacle under harmonic excitation. **INTERNATIONAL JOURNAL OF NON-LINEAR MECHANICS**, vol. 80, p. 96-106, ISSN: 0020-7462, doi: 10.1016/j.ijnonlinmec.2015.10.007

Angela Madeo, Patrizio Neff, Placidi L, others (2016). First evidence of non-locality in real band-gap metamaterials: determining parameters in the relaxed micromorphic model. **PROCEEDINGS OF THE ROYAL SOCIETY OF LONDON. SERIES A**, vol. 472, 20160169, ISSN: 1364-5021, doi: 10.1098/rspa.2016.0169

Ugo Andreaus, Francesco dell'Isola, Ivan Giorgio, Placidi L, Lekszycki, T., Rizzi, N.L. (2016). Numerical simulations of classical problems in two-dimensional (non) linear second gradient elasticity. **INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE**, vol. 108, p. 34-50, ISSN: 0020-7225, doi: 10.1016/j.ijengsci.2016.08.003

Abo-el-nour N. Abd-alla, Aishah Raizah, Placidi L (2016). The influence of hydrostatic stress on the frequency equation of flexural waves in a magnetoelastic transversely isotropic circular cylinder. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK**, vol. 96, pp. 53-66, ISSN: 1521-4001, doi: 10.1002/zamm.201400059

## 2017

Placidi L, Ivan Giorgio, Alessandro Della Corte, Daria Scerrato (2017). Euromech 563 Cisterna di Latina 17-21 March 2014 Generalized continua and their applications to the design of composites and metamaterials: A review of presentations and discussions. **MATHEMATICS AND**

**MECHANICS OF SOLIDS**, vol. 22, p. 1-14, ISSN: 1081-2865, doi:  
DOI:10.1177/1081286515576948

Kezmane A., Chiaia B., Kumpyak O., Maksimov V., Placidi L (2017). 3D Modeling of reinforced concrete slab with yielding supports subject to impact load. **EUROPEAN JOURNAL OF ENVIRONMENTAL AND CIVIL ENGINEERING**, vol. 21, p. 988-1025, ISSN: 1964-8189, doi: 10.1080/19648189.2016.1194330

Misra Anil, Placidi L, Scerrato Daria (2017). A review of presentations and discussions of the Workshop "Computational Mechanics of Generalized Continua and Applications to Materials with Microstructure" that was held in Catania 29-31/10/2015. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 22, p. 1891-1904, ISSN: 1081-2865, doi: 10.1177/1081286516649654

G. Abdellaoui, et al., Placidi L (2017). Cosmic ray oriented performance studies for the JEM-EUSO first level trigger . **NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT**, vol. 866, p. 150-163, ISSN: 0168-9002, doi: DOI: 10.1016/j.nima.2017.05.043

Placidi L, Andraus U., Giorgio I. (2017). Identification of two-dimensional pantographic structure via a linear D4 orthotropic second gradient elastic model. **JOURNAL OF ENGINEERING MATHEMATICS**, vol. 103, p. 1-21, ISSN: 0022-0833, doi: 10.1007/s10665-016-9856-8

Boutin C., dell'Isola F., Giorgio I., Placidi L (2017). Linear pantographic sheets: Asymptotic micro-macro models identification. **MATHEMATICS AND MECHANICS OF COMPLEX SYSTEMS**, vol. 5, p. 127-162, ISSN: 2326-7186

Francesco dell'Isola, Placidi L, Emilio Barchiesi (2017). M&MoCS – International Research Center on Mathematics and Mechanics of Complex Systems. **NEWSLETTER - EUROPEAN MATHEMATICAL SOCIETY**, vol. 103, ISSN: 1027-488X

Abdellaoui, G, et al., Placidi L (2017). Meteor studies in the framework of the JEM-EUSO program. **PLANETARY AND SPACE SCIENCE**, vol. 143, p. 245-255, ISSN: 0032-0633, doi: 10.1016/j.pss.2016.12.001

Placidi L, Amr Ramadan El Dhaba (2017). Semi-inverse method à la Saint-Venant for two-dimensional linear isotropic homogeneous second gradient elasticity. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 22, p. 919-937, ISSN: 1081-2865, doi: 10.1177/1081286515616043

G. Rosi, Placidi L, V.H. Nguyen, Salah Naili (2017). Wave propagation across a finite heterogeneous interphase modeled as an interface with material properties. **MECHANICS RESEARCH COMMUNICATIONS**, vol. 84, p. 43-48, ISSN: 0093-6413

Giuseppe Rosi, Placidi L, Francesco dell'Isola (2017). "Fast" and "slow" pressure waves electrically induced by nonlinear coupling in Biot-type porous medium saturated by a nematic liquid crystal. **ZEITSCHRIFT FUR ANGEWANDTE MATHEMATIK UND PHYSIK**, vol. 68, 51, ISSN: 0044-2275, doi: 10.1007/s00033-017-0795-7

2018



Placidi L, Barchiesi Emilio, Misra Anil (2018). A strain gradient variational approach to damage. A comparison with damage gradient models and numerical results.. **MATHEMATICS AND MECHANICS OF COMPLEX SYSTEMS**, vol. 6, p. 77-100, ISSN: 2326-7186, doi: dx.doi.org/10.2140/memocs.2018.6.77

Barchiesi E., Placidi L, Modin I.A., Zhegalov D.V., Grigoryev M.V. (2018). A variational approach to strain gradient damage mechanics with an application to compressed frames. **PROBLEMY PROCNOSTI I PLASTICNOSTI**, vol. 80, p. 392-401, ISSN: 1814-9146

El Sherbiny Mohammed, Placidi L (2018). Discrete and continuous aspects of some metamaterial elastic structures with band gaps. **ARCHIVE OF APPLIED MECHANICS**, vol. 18, p. 1725-1742, ISSN: 0939-1533, doi: 10.1007/s00419-018-1399-1

Abdellaoui et al., Placidi L (2018). EUSO-TA – First results from a ground-based EUSO telescope. **ASTROPARTICLE PHYSICS**, vol. 102, p. 98-111, ISSN: 0927-6505, doi: 10.1016/j.astropartphys.2018.05.007

Placidi L, Barchiesi Emilio (2018). Energy approach to brittle fracture in strain gradient modelling. **PROCEEDINGS - ROYAL SOCIETY. MATHEMATICAL, PHYSICAL AND ENGINEERING SCIENCES**, vol. 474, 20170878, ISSN: 1471-2946, doi: 10.1098/rspa.2017.0878

G. Abdellaoui et al, Placidi L (2018). First observations of speed of light tracks by a fluorescence detector looking down on the atmosphere. **JOURNAL OF INSTRUMENTATION**, vol. 13, P05023, ISSN: 1748-0221, doi: 10.1088/1748-0221/13/05/P05023

Giuseppe Rosi, Placidi L, Nicolas Auffray (2018). On the validity range of strain-gradient elasticity: a mixed static-dynamic identification procedure. **EUROPEAN JOURNAL OF MECHANICS. A, SOLIDS**, vol. 69, p. 179-191, ISSN: 0997-7538, doi: doi.org/10.1016/j.euromechsol.2017.12.005

Placidi L, Misra Anil, Barchiesi Emilio (2018). Two-dimensional strain gradient damage modeling: a variational approach. **ZEITSCHRIFT FUR ANGEWANDTE MATHEMATIK UND PHYSIK**, vol. 69, 56, ISSN: 0044-2275, doi: 10.1007/s00033-018-0947-4

## 2019

Bernardino Chiaia, Emilio Barchiesi, Valerio De Biagi, Placidi L (2019). A novel structural resilience index: definition and applications to frame structures. **MECHANICS RESEARCH COMMUNICATIONS**, vol. 99, p. 52-57, ISSN: 0093-6413, doi: doi.org/10.1016/j.mechrescom.2019.03.007

Francesco dell'Isola, Pierre Seppecher, Mario Spagnuolo, Emilio Barchiesi, François Hild, Tomasz Lekszycki, Ivan Giorgio, Placidi L, Ugo Andreaus, Massimo Cuomo, Simon R. Eugster, Aron Pfaff, Klaus Hoschke, Ralph Langkemper, Emilio Turco, Rizacan Sarikaya, Aviral Misra, Michele De Angelo, Francesco D'Annibale, Amine Bouterf, Xavier Pinelli, Anil Misra, Boris Desmorat, Marek Pawlikowski, Corinne Dupuy, Daria Scerrato, Patrice Peyre, Marco Laudato, Luca Manzari, Peter Göransson, Christian Hesch, Sofia Hesch, Patrick Franciosi, Justin Dirrenberger, Florian Maurin, Zacharias Vangelatos, Costas Grigoropoulos, Vasileia Melissinaki, Maria Farsari, Wolfgang Müller, Emek Abali, Christian Liebold, Gregor Ganzosch, Philip Harrison, Rafal Drobnicki, Leonid Igumnov, Faris Alzahrani, Tasawar Hayat (2019). Advances in Pantographic



Structures: Design, Manufacturing, Models, Experiments and Image Analyses. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 31, p. 1231-1282, ISSN: 0935-1175, doi: doi.org/10.1007/s00161-019-00806-x

Scala I., Rosi G., Placidi L, Nguyen V.-H., Naili S. (2019). Effects of the microstructure and density profiles on wave propagation across an interface with material properties. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 31, p. 1165-1180, ISSN: 0935-1175, doi: 10.1007/s00161-018-0740-9

Nima Nejadi Sadeghi, Placidi L, Maurizio Romeo, Anil Misra (2019). Frequency band gaps in dielectric granular metamaterials modulated by electric field. **MECHANICS RESEARCH COMMUNICATIONS**, vol. 95, p. 96-103, ISSN: 0093-6413, doi: doi.org/10.1016/j.mechrescom.2019.01.006

Emilio Barchiesi, Mario Spagnuolo, Placidi L (2019). Mechanical Metamaterials: a state of the art. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 24, p. 212-234, ISSN: 1081-2865, doi: 10.1177/1081286517735695

Emilio BARCHIESI, Gregor Ganzosch, Christian Liebold, Placidi L, Roman Grygoruk, Wolfgang Müller (2019). Out-of-plane buckling of pantographic fabrics in displacement-controlled shear tests: experimental results and model validation. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 31, p. 33-45, ISSN: 0935-1175, doi: 10.1007/s00161-018-0626-x

Barchiesi Emilio, Eugster Simon R., dell'Isola Francesco, Placidi L (2019). Pantographic beam: A complete second gradient 1D-continuum in plane. **ZEITSCHRIFT FUR ANGEWANDTE MATHEMATIK UND PHYSIK**, vol. 70, 135, ISSN: 0044-2275, doi: 10.1007/s00033-019-1181-4

dell'Isola F., Seppecher P., Alibert, J.J., Lekszycki T., Grygoruk R., Pawlikowski M., Steigmann D., Giorgio I., Andraus U., Turco E., Gołaszewski M., Rizzi N., Boutin C., Eremeyev V., Misra A., Placidi L, Barchiesi E., Greco L., Cuomo M., Cazzani, A., Della Corte, A., Battista A., Scerrato D., Eremeeva I.Z., Rahali Y., Ganghoffer J.-F., Müller W., Ganzosch G., Spagnuolo, M., Pfaff A., Barcz K., Hoschke K., Negggers J., Hild F. (2019). Pantographic metamaterials: an example of mathematically driven design and of its technological challenges. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 31, p. 851-884, ISSN: 0935-1175, doi: 10.1007/s00161-018-0689-8

Placidi L, Anil Misra, Emilio Barchiesi (2019). Simulation results for damage with evolving microstructure and growing strain gradient moduli. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 31, p. 1143-1163, ISSN: 0935-1175, doi: 10.1007/s00161-018-0693-z

Abdellaoui, G.h, et al. Placidi L. et al. (2019). Ultra-violet imaging of the night-time earth by EUSO-Balloon towards space-based ultra-high energy cosmic ray observations. **ASTROPARTICLE PHYSICS**, vol. 111, p. 54-71, ISSN: 0927-6505, doi: 10.1016/j.astropartphys.2018.10.008

2020

Anil Misra, Nima Nejadi Sadeghi, Michele De Angelo, Placidi L (2020). Chiral Metamaterial Predicted by Granular Micromechanics: Verified with 1D Example Synthesized using Additive

Manufacturing. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 32, p. 1497-1513, ISSN: 0935-1175, doi: 10.1007/s00161-020-00862-8

Misra A., De Angelis M., Placidi L (2020). Non-standard Timoshenko beam model for chiral metamaterial: identification of stiffness parameters. **MECHANICS RESEARCH COMMUNICATIONS**, vol. 103, 103462, ISSN: 0093-6413, doi: doi.org/10.1016/j.mechrescom.2019.103462

Yury Solyaev, Sergey Lurie, Emilio Barchiesi, Placidi L (2020). On the dependence of standard and gradient elastic material constants on a field of defects. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 25, p. 35-45, ISSN: 1081-2865, doi: 10.1177/1081286519861827

2021

Bernardino Chiaia, Valerio De Biagi, Placidi L (2021). A damaged non-homogeneous Timoshenko beam model for a dam subjected to aging effects. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 26, p. 694-707, ISSN: 1081-2865, doi: 10.1177/1081286520965644

Emek Ebali, Andre Klunker, Emilio Barchiesi, Placidi L (2021). A novel phase-field approach to brittle damage mechanics of gradient metamaterials combining action formalism and history variable. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK**, vol. 101, p. 1-21, ISSN: 1521-4001, doi: 10.1002/zamm.202000289

E. Barchiesi, H. Yang, C.A. Tran, Placidi L, WH Mueller (2021). Computation of brittle fracture propagation in strain gradient materials by the FEniCS library. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 26, p. 325-340, ISSN: 1081-2865, doi: doi.org/10.1177/1081286520954513

M. Ould Ouali, P. Poorsolhjouy, Placidi L, A. Misra (2021). Evaluation of the effects of stress concentrations on plates using granular micromechanics. **CONSTRUCTION AND BUILDING MATERIALS**, vol. 290, 123227, ISSN: 0950-0618, doi: org/10.1016/j.conbuildmat.2021.123227

Emilio Barchiesi, Anil Misra, Placidi L, Emilio Turco (2021). Granular micromechanics-based identification of isotropic strain gradient parameters for elastic geometrically nonlinear deformations. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK**, vol. 147, 04021098, ISSN: 1521-4001, doi: 10.1002/zamm.202100059

Dmitry Timofeev, Emilio Barchiesi, Anil Misra, Placidi L (2021). Hemivariational continuum approach for granular solids with damage-induced anisotropy evolution. **MATHEMATICS AND MECHANICS OF SOLIDS**, vol. 26, p. 738-770, ISSN: 1081-2865, doi: 10.1177/1081286520968149

Anil Misra, Placidi L, Francesco dell'Isola, Emilio Barchiesi (2021). Identification of a geometrically nonlinear micromorphic continuum via granular micromechanics. **ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND PHYSIK**, vol. 72, p. 1-21, ISSN: 0044-2275, doi: <https://doi.org/10.1007/s00033-021-01587-7>

Placidi L, Emilio Barchiesi, Anil Misra, Dmitry Timofeev (2021). Micromechanics-based elasto-plastic–damage energy formulation for strain gradient solids with granular microstructure. **CONTINUUM MECHANICS AND THERMODYNAMICS**, vol. 33, p. 2213-2241, ISSN: 0935-1175, doi: 10.1007/s00161-021-01023-1

Valerii Maksimov, Emilio Barchiesi, Anil Misra, Placidi L (2021). Two-dimensional analysis of size effects in strain gradient granular solids with damage-induced anisotropy evolution. **JOURNAL OF ENGINEERING MECHANICS**, vol. 147, p. 04021098-1-04021098-10, ISSN: 0733-9399, doi: doi:10.1061/(ASCE)EM.1943-7889.0002010

[In press](#)

C. A. Tran, E. Barchiesi, Placidi L, F.J. León Trujillo (in press). A block-based variational elasto-damage model for masonry analysis inspired from granular micromechanics: Preliminary study. **MECHANICS RESEARCH COMMUNICATIONS**, ISSN: 0093-6413, doi: <https://doi.org/10.1016/j.mechrescom.2021.103802>

## Books

[2001](#)

Master thesis at Università degli Studi di Napoli "Federico II".  
Title: Su Alcune Applicazioni della teoria dell'elasticità lineare e non lineare.  
Author: Luca Placidi  
Relator: Antonio Romano

[2002](#)

Master of Science in Engineering Mechanics at Virginia Polytechnic Institute and State University.  
Title: Solution of Saint-Venant and Almansi-Michell Problem  
Author: Luca Placidi  
Supervisor: R. Batra

[2004](#)

German PhD thesis  
Title: Thermodynamically Consistent Formulation of Induced Anisotropy in Polar Ice Accounting for Grain Rotation, Grain-size Evolution and Recrystallization  
Author: Luca Placidi  
Supervisor: Kolumban Hutter  
Correlator: Bob Svendsen  
Hyperlinkdella tesi: <http://tuprints.ulb.tu-darmstadt.de/epda/000614/>

[2006](#)

Italian PhD thesis  
Title: *Microstructured Continua treated by Theory of Mixtures*  
Author: Luca Placidi  
Supervisor: Francesco dell'Isola  
Correlator: Nicoletta Ianiro

[2012](#)

Authors: Francesco dell'Isola, Luca Placidi  
Title: *Esercizi e Complementi di Scienza delle Costruzioni. Volume 1: matrici cinematiche, Strutture isostatiche.*  
Editore: Società editrice Esculapio, 2012 ISBN: 978-88-7488-558-9

2019

Francesco dell'Isola, Ugo Andreaus, Antonio Cazzani, Raffaele Esposito, Placidi L, Umberto Perego, Giulio Maier, Pierre Seppecher (2019). The Complete Works of Gabrio Piola: Volume II. ADVANCED STRUCTURED MATERIALS, vol. 97, p. 1-949, Springer, Cham, ISBN: 978-3-319-70690-0, ISSN: 1869-8433, doi: <https://doi.org/10.1007/978-3-319-70692-4>

## Contributions for conferences

2003

For the conference *Milestones in physical glaciology (From the pioneers to a modern science)*. Held in honour of Prof. Dr. Hans Rothlisberger on the occasion of his eightieth birthday. MITTEILUNGEN DER VERSUCHSANSTALT FÜR WASSERBAU, HYDROLOGIE UND GLAZIOLOGIE AN DER EIDGENÖSSISCHEN TECHNISCHEN HOCHSCHULE ZÜRICH, vol. 180, p. 55-72, ZÜRICH:Mitteilungen VAW ETH, ISSN: 0374-0056, Zurich  
Title: Advances in Constitutive Modeling of Anisotropic Ice in Polar Ice Sheets  
Authors: Luca Placidi, Sérgio H. Faria, Kolumban Hutter.  
Publisher and place of publication: Mitteilungen VAW ETH, Zurich, vol. 180, 55-72, (2003).

2004

For the conference IUTAM04  
Title: Characteristics of Orientation and Grain-size Distributions.  
Authors: Luca Placidi and Kolumban Hutter.  
Publisher and place of publication: ICTAM04, Abstracts and CD-Rom Proceedings, IPPT PAN, Warsaw, 2004. ISBN: 83-89687-01-1

For the conference STAMM04

Title: Balance Equations for Polycrystalline Materials with the Inclusion of Orientation and Grain-size Distributions.  
Authors: Luca Placidi and Kolumban Hutter.  
Publisher and place of publication: in: Trends in Applications of Mathematics to Mechanics. Proceedings of the XIVth International Symposium on Trends in Applications of Mathematics to Mechanics (STAMM'2004), Seeheim, Germany, 22--28 August 2004, K. HUTTER, Y. WANG, eds., Berichte aus der Mathematik, Shaker, Aachen, 2005.

2005

For the conference WASCOM 05,  
Title: Instability of a pre-stressed solid–fluid mixture.  
Authors: Francesco dell'Isola, Nicoletta Ianiro e Luca Placidi.  
Publisher and place of publication: DOI No: [10.1142/9789812773616\\_0025](https://doi.org/10.1142/9789812773616_0025), Source: [WAVES AND STABILITY IN CONTINUOUS MEDIA](#) (pp 170-175) Copyright: World Scientific Publishing Co. Pte. Ltd.

2009

For the conference PICR-2  
Title: A Continuum Mechanical Model for the flow of anisotropic polar ice.  
Author: Ralf Greve, Luca Placidi, Hakime Seddik.

Journal: Low Temperature Science 68 (Suppl.), 137-148.

Hyperlink: [http://arxiv.org/PS\\_cache/arxiv/pdf/0903/0903.3078v2.pdf](http://arxiv.org/PS_cache/arxiv/pdf/0903/0903.3078v2.pdf)

Publisher and place of publication: In : T. Hondoh (Ed.), *Proceedings of the 2nd International Workshop on Physics of Ice Core Records (PICR-2)* Institute of Low Temperature Science, Hokkaido University, Sapporo, Japan.

2011

Conference: XIV Convegno ANIDIS L'Ingegneria Sismica in Italia

Authors: Luca Placidi, Bernardino Chiaia, Claudia Cennamo, Ugo Andreus

Title: Dinamica di elementi non strutturali soggetti ad azione sismica

2015

Kezmane Ali, Placidi L, Boukais Said, Hamizi M, Hannachi NE (2015). NUMERICAL STUDY OF STEEL PLATE REINFORCED CONCRETE WALLS BEHAVIOR. In: (a cura di): Gomes, JFS; Meguid, SA, PROCEEDINGS OF THE 6TH INTERNATIONAL CONFERENCE ON MECHANICS AND MATERIALS IN DESIGN. p. 151-152, ISBN: 978-989-98832-3-9, P Delgada, Portugal, JUL 26-30, 2015

2017

Placidi L, Emilio Barchiesi, Antonio Battista (2017). An Inverse Method to Get Further Analytical Solutions for a Class of Metamaterials Aimed to Validate Numerical Integrations.. In: (a cura di): Francesco dell'Isola et al., *Mathematical Modelling in Solid Mechanics.. ADVANCED STRUCTURED MATERIALS*, vol. 69, p. 193-210, Springer Nature, ISSN: 1869-8433, Perpignan, 30/5/2016-3/6/2016

Placidi L, Emilio Barchiesi, Alessandro Della Corte (2017). Identification of Two-Dimensional Pantographic Structures with a Linear D4 Orthotropic Second Gradient Elastic Model Accounting for External Bulk Double Forces. In: (a cura di): Francesco dell'Isola et al., *Mathematical Modelling in Solid Mechanics. ADVANCED STRUCTURED MATERIALS*, vol. 69, p. 211-232, Pte Ltd.:Springer Nature , ISSN: 1869-8433, Perpignan, 30/5/2016-3/6/2016

2020

D. Assante, G. M. Cennamo, Placidi L (2020). 3D Printing in Education: an European perspective. In: 2020 IEEE Global Engineering Education Conference (EDUCON). p. 1133-1138, Porto, Portogallo, doi: doi: 10.1109/EDUCON45650.2020.9125311.

Placidi L, A. Amendola, M. Miniaci, F. Fraternali. A (2020). A discrete-to-continuum approach to frequency bangaps in 1D biatomic metamaterials. In: *Proceedings*. p. 604-611, easdprocedia, Athens, Greece, 23-26 November 2020, doi: 10.47964/1120.9047.21606

## Abstracts for conferences

2004

Symposium: *Tectonics on Human Time Scales*

Title: Polycrystal Creep of Polar Ice and the Reconstruction of the Climate from Ice Core Isotope Analyses.

Authors: Kolumban Hutter, Luca Placidi

## 2005

Conference: *Workshop on Continuous Diversity, Complex Mixtures and Applications*  
Place: Max Planck Institute for Mathematics in the Sciences of Leipzig (Germany).  
Title: "Characterization of Grain Boundary Migration and Polygonization via the Postulate of Global Action"  
Author: Luca Placidi.

For the conference AIMETA 05,  
Title: Compatibilità Termodinamica per una Legge Costitutiva Anisotropa per Materiali Policristallini e Incompressibili.  
Authors: Francesco dell'Isola, Nicoletta Ianiro e Luca Placidi.  
Publisher and place of publication: AIMETA 2005 Book of Abstracts del XVII congresso dell'Associazione italiana di meccanica teorica e applicata, Firenze, 11-15 settembre 2005. Firenze. Firenze University Press.

## 2007

For the conference PICR-2  
Title: A Continuum Mechanical Model for anisotropic polar ice, based on a scalar, anisotropic flow enhancement factor.  
Authors: Luca Placidi.  
Publisher and place of publication: In : T. Hondoh (Ed.), *Book of Abstracts of the 2nd International Workshop on Physics of Ice Core Records (PICR-2)*. Institute of Low Temperature Science, Hokkaido University, Sapporo, Japan.

For the conference AGU2007  
Title: A finite-element model for the vicinity of the Dome Fuji with flow-induced ice anisotropy and fabric evolution  
Authors: Hakime Seddik, Ralf Greve, Luca Placidi, Thomas Zwinger, Olivier Gagliardini.

## 2008

Workshop: Modelling and Interpretation of Ice Microstructures,  
Place: Goettingen dal 09 all'11 Aprile 2008  
Title: Continuum-mechanical, Anisotropic Flow model, based on an anisotropic Flow Enhancement factor. CAFFE model and applications.  
Author: Luca Placidi

Conferenza: AOGS2008, sessione IWG04 "Recent Advances in Polar Sciences and Global Warming".  
Authors: Hakime Seddik, Ralf Greve, Thomas Zwinger, Olivier Gagliardini and Luca Placidi  
Title: A Full-Stokes Ice Flow Model for the Vicinity of Dome Fuji, Antarctica, with Induced Anisotropy and Fabric Evolution.

Conferenza: "The Mechanics Conference To Celebrate the 100th Anniversary of The Department of Engineering Science and Mechanics"  
Authors: Giovanni Del Bufalo, Luca Placidi, Maurizio Porfiri

Title: A mixture theory model of Ionic Polymer Metal Composites.  
Book of Abstracts. Professor Liviu Librescu Memorial Sessions at the ESM 2008 Mechanics Conference Virginia Tech., May 29--30, 2008  
Edited by Pier Marzocca e Marek-Jerzy Pindera

#### 2009

Workshop “Research Workshop on Bifurcations in Oscillators with Elastic and Impact Constraints” dal 4 November al 6 November, 2009,

Luogo: Imperial College London, United Kingdom, pubblica un abstract nella raccolta degli abstract:

Authors: Ugo Andreaus, Luca Placidi, Giuseppe Rega.

Title: Soft contact dynamics of an impacting bilinear oscillator: numerical simulation and hints for describing an impacted cantilever beam

Hyperlink of workshop: <http://www2.imperial.ac.uk/~omakaren/boeic2009/>

Hyperlink of the book of abstract: <http://www2.imperial.ac.uk/~omakaren/boeic2009/abstracts.pdf>

#### 2010

Per il XVIII Convegno GIMC2010 di Meccanica Computazionale, presenta il seguente lavoro, che pubblica nel libro degli abstract:

Authors: Ugo Andreaus, Luca Placidi, Giuseppe Rega.

Title: Dinamica di una mensola con impatti soffici: confronto del modello infinito dimensionale con quello equivalente ad un grado di liberta' (SDOF).

#### 2011

Riunione: Gruppo Materiali dell'AIMETA. Udine, 23-25 Febbraio 2011.

Authors: Alessandro Lucantonio, Paola Nardinocchi, Luca Placidi

Title: Modellazione multifisica di materiali soffici attivi

#### 2012

Workshop “Second Gradient and Generalized continua”

Authors: Luca Placidi

Title: Static and dynamic solutions in second gradient 3D continua: the case of Linear plane wave propagation and normal transmission and reflection at discontinuity surfaces with material properties.

Conference: “8<sup>th</sup> European Solid Mechanics Conference”

Authors: Francesco dell'Isola, Angela Madeo, Luca Placidi

Title: Propagation, transmission and reflection of acoustic waves in second gradient 3D continua. The abstract has been published in the book of abstracts of the conference.

#### 2013

I participate in the 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013) presenting the following 4 works. Abstracts are published in the Book of Abstracts (Editors: Mark Lovely and Farbod Alijani):



1. Placidi L, Ugo Andreaus, Giuseppe Rega (2013). Higher order eigenmodes in tapping mode atomic force microscopy. In: The 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013). McGill University, Montreal, Canada, July 23-26, 2013
2. Placidi L, Bernardino Chiaia, Claudia Cennamo, Valerio De Biagi (2013). MEASURES OF STRUCTURAL ROBUSTNESS: SYSTEM INTEGRITY AND COMPARTMENTALIZATION. In: The 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013). McGill University, Montreal, Canada, July 23-26, 2013
3. Placidi L, Ivan Giorgio, Angela Madeo, Manuel Ferretti (2013). Towards a second gradient damage model . In: The 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013). McGill University, Montreal, Canada, July 23-26, 2013
4. Ivan Giorgio, Ugo Andreaus, Placidi L, Giuseppe Rosi (2013). MODELS FOR REMODELING IN POROUS BONE RECONSTRUCTED TISSUES SATURATED WITH INTERSTITIAL FLUIDS. In: (a cura di): Editors: Marco Amabili, Farbod Alijani, 4th Candian Conference on Nonlinear Solid Mechanics. Book of Abstracts. Montreal, Canada, July 23-26, 2013

Prof. Giuseppe Rega presents the following work for the International Conference on Nonlinear Dynamics in Engineering

Rega G., Andreaus U., Placidi L, Settini V. (2013). Nonlinear dynamics of atomic force microscopy. In: Modeling, Analysis and Applications.

I present the following two works at the Workshop on "Dynamics, stability and control of flexible structure". Senigallia, Ancona, Italy, 7 June 2013

1. Placidi L, Ugo Andreaus, Giuseppe Rega (2013). Higher order eigenmodes in tapping mode atomic force microscope. In: Organizers: Angelo Luongo and Stefano Lenci. Workshop on "Dynamics, stability and control of flexible structure". Senigallia, Ancona, Italy, 7 June 2013
2. Francesco dell'Isola, Placidi L, Giuseppe Rosi, Ivan Giorgio, Angela Madeo (2013). Reflection and transmission of plane waves at surfaces carrying material properties and embedded in second-gradient materials. In: (a cura di): Organizers: Angelo Luongo and Stefano Lenci, Workshop on "Dynamics, stability and control of flexible structure". Senigallia, Ancona, Italy, 7 June 2013

Paolo Baragatti presents the following work at the Workshop on "Dynamics, stability and control of flexible structure". Senigallia, Ancona, Italy, 7 June 2013

Paolo Baragatti, Ugo Andreaus, Placidi L (2013). Forced response of beams with unilateral supports: experimental set-up and preliminary results . In: Organizers: Angelo Luongo and Stefano Lenci. Workshop on "Dynamics, stability and control of flexible structure". Senigallia, Ancona, Italy, 7 June 2013

2014

Placidi L, Angela Madeo, Patrizio Neff, I.D. Ghiba, Giuseppe Rosi (2014). Numerical Simulations of Frequency Band-Gaps in Relaxed Micromorphic Continua. In: Euromech Colloquium 563.



Generalized Continua and their applications to the design of composites and metamaterials.  
Cisterna di Latina

Bernardino Chiaia, Placidi L (2014). Short-term dynamics of rigid and yielding supports modeling. In: Book of abstracts of the International Workshop for Young Researchers "Resilience by Design". Tomsk, 11-12/11/2014

## 2015

Placidi L, Bernardino Chiaia: Ali Kezmane, Oleg Kumpyak, Valerii Maksimov (2015). Experimental analysis and numerical simulations of two-way reinforced concrete slabs over different kinds of yielding supports under short-term dynamic loading. In: Atti del XXII Congresso dell'Associazione Italiana di Meccanica Teorica e Applicata. GENOVA:De Ferrari, Genova University Press, ISBN: 978-88-97752-52-3, genova, 14-17 Settembre 2015

Placidi L, Ugo Andreaus, Ivan Giorgio (2015). Design piezo-electromechanical systems for boundary-prescriptions in strain gradient elasticity. In: Abstracts of the workshop on "From adaptive and architecture materials to integrated smart structures: a challenge in mechanical engineering and biomechanical applications" that will take place in Arpino (Italy), April 16-18, 2015.. Arpino, April 16-18, 2015

Placidi L (2015). Gedanken experiments for the identification of microstructured continua. In: Séminaire de Biomécanique. Université Paris-Est Créteil Val de Mar. Paris, 8/10/2015

Placidi L (2015). Gedanken experiments for the identification of microstructured continua. In: Abstracts of International Prize "Tullio Levi-Civita". Dipartimento di Matematica Castelnuovo

Ugo Andreaus, Francesco dell'Isola, Ivan Giorgio, Placidi L (2015). Numerical simulations of classical problems in two-dimensional linear second gradient elasticity . In: Abstract of the Workgroup on Computational Mechanics of Generalized Continua and Applications to Materials with Microstructure, Catania, 29 31 October, 2015. Catania, 29 31 October, 2015

Ivan Giorgio, Placidi L (2015). Porous Biphase modeling of Salt Caves. In: Book of abstracts of the workshop "Going down to the microscale in multiphysics problems from seismic driven risks to petroleum geomechanics". Arpino, May 4-6, 2015

Placidi L, dell'Isola Francesco (2015). Pre-stressed solid–fluid mixtures and wave propagation. In: Book of Abstracts of the Workshop on "Going down to the microscale in multiphysics problems from seismic driven risks to petroleum geomechanics" that will take place in Arpino (Italy), May 4-6, 2015.. Arpino, May 4-6, 2015

## 2016

Placidi L (2016). Identification of microstructured continua with Gedanken experiments. In: (a cura di): Mircea Sofonea, Book of abstracts of ETAMM 2016. Perpignan:Laboratory of Mechanics and Physics of University of Perpignan Via Domitia, Perpignan, France, May 30 - June 3, 2016

G. Rosi, Placidi L (2016). Wave propagation in generalized continua in presence of interfaces. In: Abstracts of the Symposium in Computer Methods in Biomechanics and Biomedical Engineering . Tel Aviv, Israel, 20-22 September 2016

## 2017

E. Barchiesi, Placidi L, F. dell'Isola (2017). A numerical comparison between the (quasi-) inextensible pantographic beam model and the geometrically nonlinear Euler model. In: Abstracts of the 5th International Conference on Material Modeling. Roma, 14-16 June 2017

Placidi L (2017). A variational approach for dissipative strain gradient continuum damage mechanics. In: Abstracts of the workshop "New developments in micropolar theory". Berlin, 6-7 November, 2017

Placidi L, E. Barchiesi, A. Misra (2017). A variational approach toward the derivation of Karush-Kuhn-Tucker conditions for a novel 2D strain gradient damage model.. In: Abstracts of the 5th International Conference on Material Modeling. Roma, 14-16 June 2017

Placidi L, Barchiesi Emilio (2017). Dispersive behaviour of bones with higher order gradient poroelasticity. In: Abstracts of the Workshop "Bone biomechanics: multiscale and multiphysical aspects". Giuliano di Roma, 26-28 September, 2017

Placidi L, F. dell'Isola, E. Barchiesi (2017). Internal strain energy of a homogenized 1D continuum non linear model for the description of "pantographic+beams". In: Abstracts of the 5th International Conference on Material Modeling. Roma, 14-16 June 2017

E. Barchiesi, Placidi L, A. Misra (2017). Mesh-dependency, stress-strain curves and their regularization for some benchmark problems in the setting of a new 2D strain gradient damage model. In: Abstracts of the 5th International Conference on Material Modeling. Roma, 14-16 June 2017

Placidi L, Jerome Fortin, Emilio Barchiesi (2017). Modeling dispersions and attenuations for a higher order saturated porous medium: the transitions from drained, undrained and unrelaxed regimes. In: Open issues and emerging approaches in geo-environmental mechanics . Arpino, 2/5/2017-4/5/2017

Placidi L, Emilio Barchiesi, Francesco dell'Isola (2017). Modelling "pantographic beams" by means of a nonlinear 1D second gradient continuum model. In: Euromech 579. Arpino, 3/4/2017-7/4/2017

Emilio Barchiesi, Placidi L, Jerome Fortin (2017). Numerical solutions of some boundary-value problems for 1D higher order saturated porous media. In: Open issues and emerging approaches in geo-environmental mechanics. Arpino, 2/5/2017-4/5/2017

Emilio Barchiesi, Placidi L, Francesco dell'Isola (2017). Numerically tackling the solution of the (nearly-)inextensible pantographic beam model by means of variational techniques. In: EUROMECH Colloquium 579. Arpino, 3/4/2017-7/4/2017

G. Rosi, N. Auffray, Placidi L (2017). On the validity domain of strain gradient models. In: Abstract of the 5th International Conference on Material Modeling. Roma, 14-16 June 2017

## 2018

Placidi L, Barchiesi Emilio, Misra Anil (2018). An application of variational methods in strain gradient damage and fracture mechanics. In: XXII CONVEGNO GIMC, IX RIUNIONE GMA, DIPARTIMENTO DI INGEGNERIA. Ferrara, 13-14/9/2018

Placidi L, Emilio Barchiesi, Anil Misra (2018). Numerical simulations of fracture propagation in a 2-dimensional isotropic strain gradient continuum. In: Abstracts of the Workshop "Encounter of the third kind" on "Generalized continua and microstructures" 3-7 April 2018, Arpino, Italy. Arpino, 3-7 April 2018

Placidi L, Emilio Barchiesi, Anil Misra (2018). Second gradient effective elastic moduli, and their evolution due to damage and plasticity, of heterogeneous granular solids. In: Wolfgang H. Mueller, Holm Altenbach. Advances seminar: Generalized Continua in Engineering. Theory, Experiments, and Applications. Berlin, 3/9/2018-5/9/2018.

## 2019

Placidi L, Bernardino Chiaia, Emilio Barchiesi, Valerio De Biagi (2019). A novel structural resilience index: definition and applications to frame structures. In: AIMETA 2019: XXIV CONGRESSO - ASSOCIAZIONE ITALIANA DI MECCANICA TEORICA E APPLICATA.

Placidi L (2019). An application of variational methods in strain gradient damage and fracture mechanics. In: Seminar at the Department of Mechanical Engineering Isfahan University of Technology. Isfahan, 28/04/2019

Placidi L (2019). An application of variational methods in strain gradient damage and fracture mechanics . In: Abstract for PhD course at the DIPARTIMENTO DI INGEGNERIA CIVILE Dottorato di Ricerca in Rischio e Sostenibilita' nei Sistemi dell'ingegneria Civile, Edile E Ambientale. Università degli studi di Salerno.

Placidi L, Emilio Barchiesi, Anil Misra (2019). Damage and plastic evolution of second gradient effective elastic moduli of heterogeneous granular materials. In: (a cura di): The workshop was coordinated by Samuel Forest, Matthieu Mazière, Ioannis Stefanou and Francesco D'Annibale. , Book of abstract. Arpino, 8-12/4/2019

Barchiesi, E., Placidi L (2019). Energy approach to damage and fracture mechanics in strain gradient materials. In: Book of abstracts. Centre for Advanced Academic Studies Dubrovnik, Croatia, September 15-18, 2019

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