



# UNIVERSITÀ DEGLI STUDI DELL'AQUILA

## Prof. Angelo Luongo Curriculum scientifico

(Aggiornato il 2021/09/23)

### **Angelo Luongo**

Professor of Solid and Structural Mechanics

Born in Naples (Italy), the 12th April 1954

Italian Citizen

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### **EDUCATION**

1978 Master Degree cum laude in Civil Engineering, at "La Sapienza" University (Rome)

1978-1981 Scholarship of the Italian National Research Council, CNR

### **ACADEMIC POSITIONS**

1981-1988 Assistant Professor at "La Sapienza" University, Rome

1988-1990 Associate Professor at L'Aquila University

1990-date Professor at L'Aquila University

### **ACADEMIC RESPONSIBILITIES**

1989-1990 Coordinator of the educational committee of the Engineering School of L'Aquila

1994-2003 Head of Department of Civil Engineering (DISAT)

1997-2003 Member of the University Senate of L'Aquila

1989-2000 Member of the doctorate school of "Structural Mechanics" of La Sapienza and L'Aquila Universities associated

2000 Co-Founder and Coordinator of the Master Course of "Mathematical Engineering" of University of L'Aquila

2000-date Co-Founder and Member of the doctorate school of "Mathematical Models for Engineering" of University of L'Aquila

2007-2011 Pro-Rector for relationships with industries

2010-2017 Founder and Head of the International Research Center on Mathematics and Mechanics of Complex Systems, "M&MOCS"

2010-date Director of the "Laboratory of Testing of Material and Structures" of M&MOCS

2011-2012 Vicar Pro-Rector

2015-date Head of "Department of Civil, Architectural and Environmental Engineering" (DICEAA)

2015-date Member of the University Senate of L'Aquila

2018-date Coordinator of the Head of Department Commitment at L'Aquila University

### **ADMINISTRATIVE RESPONSIBILITIES**

2008-2011 Member of the Administrative Board of the IAM-Innovative Automotive Mechanics Consortium

2011-2012 Vice-President of the Administrative Board of the IAM-Innovative Automotive Mechanics Consortium

2015-2017 President of the Administrative Board of the Academic Spin-off "Diagnostic, Retrofitting, Innovation, Materials and Structures" (DRIMS)

2015-date President of the Administrative Board of the M&MOCS Foundation

### **PROFESSIONAL RESPONSABILITIES**

2011-2012 Member of the Administrative and Technical Committee of the Public Work Regional Department

### **SCIENTIFIC LEADERSHIPS**

2007-2009 Coordinator of the Scientific Consortium SICON, financed by the EU (contract MSFC-CT-2006-046177, Marie Curie Conferences and Training Courses)

2007-2008 Coordinator of an international team financed by EU (INTAS Collaborative Call with the Russian Academy of Science, Ref Nr 06-1000013-909)

2012-2016 Coordinator of the Aimetaís group "Dynamics and Stability" (GADeS)

1998-2012 Responsible of Research Unit of PRIN projects, financed by the Italian Ministry of Education (MIUR) in: 1998, 2000, 2002, 2004, 2006, 2008 (biennial projects)

2012-2015 Principal Investigator of a PRIN triennial project

### **EDITORIAL BOARD MEMBERSHIPS**

2007-2011 Associate editor of the International Journal "Mathematical Problems in Engineering" (Hindawi)

2012-date Member of the Advisory Board of the International journal "Mathematics and Mechanics of Complex Systems" (MSP, Berkeley)

2012-2013 Member of the Editorial Board of the Journal "Open Aerospace Engineering Journal" (Bentham)

2013-date Member of the Editorial Advisory Board of "Modern Mechanics and Mathematics" book series (Taylor & Francis)

2014-date Associate Editor of "Nonlinear Dynamics" (Springer)

2015-2017 Member of the Editorial Board of the "International Journal of Nonlinear Dynamics and Control" (InderScience)

2016-date Associate Editor of "Journal of Applied and Computational Mechanics" (Shahid Chamran University of Ahvaz, Iran)

2019-date Member of the Editorial Board of Applied Sciences (MDPI)

2020-date Editor in Chief of Civil\_Eng, MPDI

## TEACHING AND DISSEMINATION ACTIVITIES

### Organization of schools

- "Stability of equilibrium", Rome 1988;
- "Nonlinear Dynamics", Rome 1990;
- "Stability and Bifurcations of Nonlinear Dynamical Systems" (Marie Curie Conference), L'Aquila, 2007
- "Beam and Cable Nonlinear Mechanics", Genoa, 2014;
- "Dynamic Stability and Control of Flexible Structures", Sperlonga (Italy) 2013;
- "Seismic Dynamics", Messina 1991, Pescara 1996.

### Organization of conferences

1. Co-organizer of the Minisimposium "Passive control of structures via nonlinear energy sinks", CSNND 2012, April 30-May 2, 2012, Marrakech, Morocco.
2. Co-organizer of the Minisimposium "Dynamical systems, stability and bifurcation ", XXI AIMETA Conference, September 17-20, 2013, Turin, Italy.
3. Co-organizer of the Minisimposium "New vibration absorbers and control devices: Piezo-electric systems, energy harvesting and nonlinear energy sinks", CSNND 2014, May 19-21, 2014, Agadir, Morocco.
4. Co-organizer of the Minisimposium "Dynamics and Stability of mechanical systems ", XXII AIMETA Conference, September 14-7, 2015, Genoa, Italy.
5. Chair of the EuroMech Colloquium 562 " Stability and Control of Nonlinear Vibrating Systems, 24-28 May, 2015, Sperlonga, Italy.

## RESEARCH ACTIVITY

### Main fields of interest:

Linear and Nonlinear Dynamics: Suspended cables, Beams, Tethered Satellite Systems, Linear and nonlinear spatially-periodic systems, Nonlinear Energy Sinks, Travelling masses/forces;  
Buckling and Postbuckling: Systems of Beams, Thin-Walled Beams, Nearly-simultaneous buckling modes;  
Aeroelasticity: Stability of nonlinear discrete and continuous systems, Passive control by Tuned Mass Dampers and Nonlinear Energy Sinks;  
Dynamic instability: Follower forces, Ziegler Paradox, Nicolai Paradox, Piezo-Electro-Mechanical beams, Nonlinear effects;  
Perturbation Methods: Eigenvalue sensitivity for defective and nearly-defective dynamical systems, Algorithms for multiple static/dynamic bifurcations, Singular systems, Discrete-time systems;  
Localization phenomena: Linear and nonlinear systems in buckling and dynamics;  
Computational Mechanics: Finite Strips, Generalized Beam Theory (GBT).

### Papers authored/co-authored

In international journals: about 135 (indexed by Scopus)

In conferences: about 20 (indexed by Scopus)

### **Bibliometric indexes**

h-index: 36 (Scopus 07/04/2021)

number of citations: 3554 (Scopus 07/04/2021)

### **Educational Books**

1. Luongo, A., Paolone, A., *Meccanica delle Strutture: Sistemi rigidi ad elasticità concentrata*, MASSON, Milano, 1997.
2. Luongo, A., Paolone, A., *Scienza delle Costruzioni. Vol. 1: Il Continuo di Cauchy*, CEA, Milano, 2004.
3. Luongo, A., Paolone, A., *Scienza delle Costruzioni. Vol. 2: Il Problema di De Saint Venant*, CEA, Milano, 2005.

### **Scientific Books**

1. Pignataro, M., Rizzi, N., Luongo, A., *Stabilità, Biforcazione e comportamento Postcritico delle Strutture Elastiche*, ESA, Roma, 1983.
2. Pignataro, M., Rizzi, N., Luongo, A., *Bifurcation, Stability and Postcritical behaviour of elastic structures*, Elsevier Science Publishers, Amsterdam, 1990.
3. Luongo, A., Zulli, D., *Mathematical Models of Beams and Cables*. Wiley-ISTE, 2014, ISBN: 978-1-84821-421-7.

### **Special Issues and Volumes**

1. Editor of the book "Recent Research Developments in Sound & Vibration", Transworld Research Network, Kerala, India, ISBN:81-7736-186-4, 2003.
2. Guest editor of the Special Issue "Advances in dynamics, stability and control of mechanical systems", *Meccanica*, 2015, DOI 10.1007/s11012-014-0089-5.
3. Guest editor (with S. Lenci) of the Special Issue "Dynamics and Control", *Int. Journal of Nonlinear Mechanics*, 2016.
4. Guest Editor (with S. Casciati) of the Special Issue "Recent developments in structural nonlinear dynamics", *Nonlinear Dynamics*, 2016.
5. Guest Editor (with S. Casciati) of the Special Issue "Control of nonlinear systems", *Int. Journal of Smart Structures and Systems*, 2016.
6. Guest editor (with G. Rega) of the Special Issue "Nonlinear Dynamics, Identification and Monitoring of Structures (dedicated to the memory of F. Benedettini)", *Meccanica*, 2016.

### **Invited and plenary lectures**

1. ENOC 2002- 4th European Nonlinear Oscillations Conference Moscow 2002, Russia
2. CIMS2008 - Coupled Instabilities in Metal Structures, University of Sydney, Australia, 2008
3. DINCON 2010 - 9th Brazilian Conference on Dynamics, Control and Their Applications, Universidade Estadual Paulista "Júlio de Mesquita Filho", Brazil, 2010
4. PHYSCON 2011, Minisymposium on "Stability Problems with Applications in Physics and Mechanics", Leon, Spain, 2011
5. CanCNSM2013, 4th Canadian Conference on Nonlinear Solid Mechanics, Montreal, Canada, 2013
6. ICONNE 2015, International Conference on Nonlinear Dynamics, Chaos, Control and Applications to Engineering, Rio de Janeiro, Brazil, 2015

## **Reviewer activity**

Reviewer of several international journals, including: Applied Mathematical Modelling, Communications in Nonlinear Science and Numerical Simulation, Computers and Structures, Continuum Mechanics and Thermodynamics, Engineering Failure Analysis, European Journal of Mechanics, Int. J. Damage Mechanics, Int. J. Mechanical Science, Int. J. Mechanical Sciences, Int. J. Nonlinear Mechanics, Int. J. of Bifurcation and Chaos, Int. J. of Solids and Structures, J. Applied Mechanics, J. Engineering Mechanics, J. of Computation and Applied Mathematics, J. of Computation and Nonlinear Dynamics, J. of Fluid and Structures, J. of Mathematical Biology, J. of Mechanics of Materials and Structures, J. of Sound and Vibration, J. of Vibration and Acoustics, J. of Vibration and Control, Mathematics and Mechanics of Solids, Meccanica, Nonlinear Dynamics, Thin-Walled Structures, ZAMM, ZAMP.

## **TRAINING ACTIVITY**

### **As PhD supervisor:**

A. Paolone (now Full Professor at Univ. of Rome "Sapienza")  
A. Di Egidio (now Associate Professor at Univ. of L'Aquila)  
V. Gattulli (now Associate Professor at Univ. of L'Aquila)  
F. Di Fabio (now Assistant Professor at Univ. of L'Aquila)  
F. Di Tomasso (now Professional Engineer)  
G. DiAmore (now Technician at Univ. of Rome "Sapienza")  
D. Zulli (now Associate Professor at Univ. of L'Aquila)  
A. De Simone (now Professional Engineer)  
F. DiAnnibale (now Assistant Professor at Univ. of L'Aquila)  
M. Ferretti (now Assistant Professor at Univ. of L'Aquila)  
I. Scognamiglio (now Professional Engineer)  
S. Di Nino (now Researcher at Univ. of L'Aquila)

### **As post-doc supervisor:**

F. Romeo (now Associate Professor at Univ. of Rome "Sapienza")  
M. Vasta (now Associate Professor at Univ. of Chieti-Pescara)  
S. Bruno (now Professional Engineer)  
M. Lepidi (now Assistant Professor at Univ. of Genoa)  
A. Contento (now Post-doc at Univ. of Illinois Urbana-Champaign)

### **As hosting research leader:**

M. Arkhipova (Associate Professor at S. Petersburg Univ.)  
A.O. Belyakov (Senior Research Fellow, Lomonosov Moscow State Univ.)  
A. Mailybaev (Professor, IMPA, Rio de Janeiro, Brasil)  
G. Ranzi (Professor at Univ. of Sydney)