



UNIVERSITÀ DEGLI STUDI DELL'AQUILA
Prof. Manuel Ferretti
Curriculum scientifico

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PERSONAL INFORMATION

- *First Name:* Manuel
- *Surname:* Ferretti
- *ID Orcid:* [0000-0002-7578-6699](https://orcid.org/0000-0002-7578-6699)
- *ID Scopus:* [55480129300](https://scopus.org/authid/detail.url?authorId=55480129300)
- *Address:* Piazzale Pontieri 1, Monteluco di Roio, 67100 L'Aquila, Italy
- *Department:* DICEAA and M&MoCS
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EDUCATION

- *2006-2009:* Bachelor's Degree in Civil Engineering, University of L'Aquila, Italy. Graduated with full marks (110/110 cum laude).
- *2009-2011:* Master's Degree in Civil Engineering, University of L'Aquila, Italy. Graduated with full marks (110/110 cum laude).
- *2011-2014:* Ph.D. in joint supervision between DICEAA, Università degli Studi dell'Aquila (Italy) & L aMCoS, Institut National des Sciences Appliquées de Lyon ? INSA (France). Italian Ph.D. in Ingegneria e Modellistica Fisico-Matematica (Engineering and Physical-Mathematical Modelling). French Ph.D. in Mécanique, Génie Mécanique, Génie Civil (Mechanics, Mechanical Engineering, Civil Engineering). Date of defense: November 7, 2014.

POSITIONS

- *2014-2018: **Post-Doc*** at International Research Center on Mathematics and Mechanics of Complex System (M&MoCS) and Department of Civil, Construction-Architectural and Environmental Engineering (DICEAA), University of L'Aquila, Italy.
- *2018-2021: **Assistant Professor** (RTDb)* in Solids and Structural Mechanics (SSD ICAR/08 - Scienza delle Costruzioni) at the Department of Civil, Construction-Architectural and Environmental Engineering of the University of L'Aquila, Italy (from July 16, 2018).
- *01/10/2018:* He acquired the Italian national scientific habilitation of **Associate Professor** for the SSD ICAR/08 - Scienza delle Costruzioni (Solids and Structural Mechanics).
- *2021-Present: **Associate Professor*** in Solids and Structural Mechanics (SSD ICAR/08 - Scienza delle Costruzioni) at the Department of Civil, Construction-Architectural and Environmental Engineering of the University of L'Aquila, Italy (from July 16, 2021).

ACADEMIC RESPONSIBILITIES

- *2019-Present:* Member of the Academic Board in the doctoral school of Civil, Construction-Architectural and Environmental Engineering, University of L'Aquila.

SCHOLARSHIPS

- Scholarship for doctoral mobility. Title: Bourses de Mobilité Doctorale du Programme Avenir Lyon Saint Etienne, 6 months, 2013.
- Scholarship for cooperation and international mobility. Title: Bourses de Coopération et Mobilité Internationales Rhône Alpes 2013 - CMIRA 2013, 6 months, 2013.

RESEARCH FIELDS

- Linear and nonlinear oscillations of one-dimensional, elastic, structural systems (strings and beams)
- Perturbation methods for multiple-bifurcations analysis of multi-parameter systems
- Stability and nonlinear oscillations of elastic systems under conservative and nonconservative loads

- Dynamics of strings and beams with traveling masses
 - Mechanics of generalized continua
 - Mechanics of woven fibrous composite reinforcements
 - Homogenization of beam-like structures
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BIBLIOMETRIC INDEXES

Last updated October 04, 2022

- **Scopus:**
 - *h-index*: 9
 - *Citations*: 337
 - **Web of Science:**
 - *h-index*: 9
 - *Citations*: 316
 - **Google Scholar:**
 - *h-index*: 11
 - *Citations*: 444
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PUBLICATIONS

Books

- Luongo, A., Ferretti, M., Di Nino, S. (2022). Stabilità e biforcazione delle strutture. Sistemi statici e dinamici, *Società Editrice Esculapio*

Peer-Reviewed Journal Articles

- Ferretti, M., Piccardo, G., (2013). Dynamic modeling of taut strings carrying a traveling mass. *Continuum Mechanics and Thermodynamics*, 25(2-4), 469-488. doi: [10.1007/s00161-012-0278-1](https://doi.org/10.1007/s00161-012-0278-1)
- Ferretti, M., Madeo, A., dell'Isola, F., Boisse, P., (2014). Modeling the onset of shear boundary layers in fibrous composite reinforcements by second-gradient theory, *Zeitschrift für angewandte Mathematik und Physik*, 65(3), 587-612. doi: [10.1007/s00033-013-0347-8](https://doi.org/10.1007/s00033-013-0347-8)
- Luongo, A., Ferretti, M., (2015). Can a semi-simple eigenvalue admit fractional sensitivities?. *Applied Mathematics and Computation*, 255, 165-178. doi: [10.1016/j.amc.2014.01.178](https://doi.org/10.1016/j.amc.2014.01.178)

- Luongo, A., Ferretti, M., Seyranian, A. P., (2015). Effects of damping on the stability of the compressed Nicolai beam. *Mathematics and Mechanics of Complex Systems*, 3(1), 1-26. doi: [10.2140/memocs.2015.3.1](https://doi.org/10.2140/memocs.2015.3.1)
- Madeo, A., Ferretti, M., dell'Isola, F., Boisse, P., (2015). Thick fibrous composite reinforcements behave as special second gradient materials: three point bending of 3D interlocks. *Zeitschrift für angewandte Mathematik und Physik*, 66(4), 2041-2060. doi: [10.1007/s00033-015-0496-z](https://doi.org/10.1007/s00033-015-0496-z)
- D'Annibale, F., Ferretti, M., Luongo, A., (2016). Improving the linear stability of the Beck's beam by added dashpots. *International Journal of Mechanical Sciences*, 110, 151-159. doi: [10.1016/j.ijmecsci.2016.03.008](https://doi.org/10.1016/j.ijmecsci.2016.03.008)
- Luongo, A., Ferretti, M., D'Annibale, F., (2016). Paradoxes in dynamic stability of mechanical systems: investigating the causes and detecting the nonlinear behaviors. *SpringerPlus*, 5(1), 1-22. doi: [10.1186/s40064-016-1684-9](https://doi.org/10.1186/s40064-016-1684-9)
- Luongo, A., D'Annibale, F., Ferretti, M., (2016). Hard loss of stability of Ziegler's column with nonlinear damping. *Meccanica*, 51(11), 2647-2663. doi: [10.1007/s11012-016-0471-6](https://doi.org/10.1007/s11012-016-0471-6)
- Luongo, A., Ferretti, M., (2016). Postcritical behavior of a discrete Nicolai column. *Nonlinear Dynamics*, 86(4), 2231-2243. doi: [10.1007/s11071-016-3075-8](https://doi.org/10.1007/s11071-016-3075-8)
- Ferretti, M., Piccardo, G., Luongo, A., (2017). Weakly nonlinear dynamics of taut strings traveled by a single moving force. *Meccanica*, 52(13), 3087-3099. doi: [10.1007/s11012-017-0690-5](https://doi.org/10.1007/s11012-017-0690-5)
- Ferretti, M., D'Annibale, F., Luongo, A., (2017). Flexural-torsional flutter and buckling of braced foil beams under a follower force. *Mathematical Problems in Engineering*, 2017, Article ID 2691963, 1-10. doi: [10.1155/2017/2691963](https://doi.org/10.1155/2017/2691963)
- Ferretti, M., (2018). Flexural torsional buckling of uniformly compressed beam-like structures. *Continuum Mechanics and Thermodynamics*, 30(5), 977-993. doi: [10.1007/s00161-018-0627-9](https://doi.org/10.1007/s00161-018-0627-9)
- Ferretti, M., Zulli, D., Luongo, A., (2019). A Continuum Approach to the Nonlinear In-Plane Galloping of Shallow Flexible Cables. *Advances in Mathematical Physics*, 2019, Article ID 6865730, 1-12. doi: [10.1155/2019/6865730](https://doi.org/10.1155/2019/6865730)
- D'Annibale, F., Ferretti, M., Luongo, A., (2019). Shear-shear-torsional homogenous beam models for nonlinear periodic beam-like structures. *Engineering Structures*, 184(1), 115-133. doi: [10.1016/j.engstruct.2019.01.039](https://doi.org/10.1016/j.engstruct.2019.01.039)
- Ferretti, M., Luongo, A., (2019). Solution to the Problem of a Mass Traveling on a Taut String via Integral Equation. *Advances in Mathematical Physics*, 2019, Article ID 6915629, 1-9. doi: [10.1155/2019/6915629](https://doi.org/10.1155/2019/6915629)

- Ferretti, M., Piccardo, G., dell'Isola, F., Luongo, A., (2019). Dynamics of taut strings undergoing large changes of tension caused by a force-driven travelling mass. *Journal of Sound and Vibration*, 458, 320-333. doi: [10.1016/j.jsv.2019.06.035](https://doi.org/10.1016/j.jsv.2019.06.035)
- Ferretti, M., Gavrilov, S. N., Eremeyev, V. A., Luongo, A., (2019). Nonlinear planar modeling of massive taut strings travelled by a force-driven point-mass. *Nonlinear Dynamics*, 97(4), 2201-2218. doi: [10.1007/s11071-019-05117-z](https://doi.org/10.1007/s11071-019-05117-z)
- Ferretti, M., Piccardo, G., Luongo, A., (2019). Semi-analytical approaches for the nonlinear dynamics of a taut string subject to a moving load. *Nonlinear Dynamics*, 98(4), 2463-2474. doi: [10.1007/s11071-019-05162-8](https://doi.org/10.1007/s11071-019-05162-8)
- Ferretti, M., D'Annibale, F., Luongo, A. (2020). Buckling of tower buildings on elastic foundation under compressive tip forces and self-weight. *Continuum Mechanics and Thermodynamics*, 1-21. doi: [10.1007/s00161-020-00911-2](https://doi.org/10.1007/s00161-020-00911-2)
- D'Annibale, F., Ferretti, M., Luongo, A. (2020). Static and Dynamic Responses of Micro-Structured Beams. *Applied Sciences*, 10(19), 6836. doi: [10.3390/app10196836](https://doi.org/10.3390/app10196836)
- Ferretti, M., D'Annibale, F. (2020). Buckling of Planar Micro-Structured Beams. *Applied Sciences*, 10 (18), 6506. doi: [10.3390/app10186506](https://doi.org/10.3390/app10186506)
- D'Annibale, F., Ferretti, M. (2021). On the effects of linear damping on the nonlinear Ziegler's column. *Nonlinear Dynamics*, 103(4), 3149-3164. doi: [10.1007/s11071-020-05797-y](https://doi.org/10.1007/s11071-020-05797-y)
- Ferretti, M., D'Annibale, F., Luongo, A. (2021). Modeling beam-like planar structures by a one-dimensional continuum: an analytical-numerical method. *Journal of Applied and Computational Mechanics*, 7, 1020-1033. doi: [10.22055/jacm.2020.33100.2150](https://doi.org/10.22055/jacm.2020.33100.2150)
- Luongo, A., D'Annibale, F., Ferretti, M. (2021). Shear and flexural factors for static analysis of homogenized beam models of planar frames. *Engineering Structures*, 228, 111440. doi: [10.1016/j.engstruct.2020.111440](https://doi.org/10.1016/j.engstruct.2020.111440)
- Ferretti, M., Di Nino, S., Luongo, A. (2021). A paradigmatic system for non-classic interactive buckling. *International Journal of Non-Linear Mechanics*, 134, 103735. doi: [10.1016/j.ijnonlinmec.2021.103735](https://doi.org/10.1016/j.ijnonlinmec.2021.103735)

Ph.D. Thesis

- Ferretti, M., (2014). Non-linear Mechanics of Generalized Continua and Applications to Composite Materials. *Università degli Studi dell'Aquila & Institut National des Sciences Appliquées de Lyon (INSA)*.

PARTICIPATION IN RESEARCH PROJECTS

- PRIN10-11, Title of the project: *Dinamica stabilità e controllo di strutture flessibili* Scientific Coordinator: Prof. Angelo Luongo, Financed by the Italian Ministry of Education, Universities and Research.
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EDITORIAL POSITIONS

- 01/03/2018-01/03/2020: Member of the editorial board of *Applied and Computational Mathematics*, Science Publishing Group.
 - 2020: Guest Editor of the S.I. Homogenization Methods in Materials and Structures, *Applied Sciences*.
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REVIEWER FOR INTERNATIONAL JOURNALS

- Advances in Civil Engineering
 - Archive of Applied Mechanics
 - Continuum Mechanics and Thermodynamics
 - Journal of Vibration and Control
 - International Journal of Non-Linear Mechanics
 - International Journal of Solids and Structures
 - Mathematics and Mechanics of Solids
 - Meccanica
 - Mechanics Research Communications
 - Nonlinear Dynamics
 - Proceedings of the Royal Society A
 - Shock and Vibration
-

AFFILIATIONS AT SCIENTIFIC ASSOCIATIONS AND SOCIETIES

International

- EUROMECH ? European Mechanics Society

National

- AIMETA - Associazione Italiana di Meccanica Teorica e Applicata
 - GADeS - Gruppo AIMETA di Dinamica & Stabilità
 - SISCO - Società Italiana di Scienza delle Costruzioni
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ORGANIZATION OF CONFERENCES

- Euromech Colloquium 562, Sperlonga, Italy, May 24-28 2015.