



Affiliation

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Federico Cluni

Associate Professor in Structural Mechanics

Profile

Federico Cluni obtained the master degree in Civil Engineering from the University of Perugia in 2001 with a thesis titled "The method of homogenization for the characterization of the masonry".

He obtained the PhD degree in Civil Engineering from the University of Perugia in 2005 with a Ph.D. thesis titled "Study the dynamic behaviour of structural cables: Numerical modelling and experimental tests".

From 2004 and 2010 he was research fellow at University of Perugia. From 2010 to 2018 he was Assistant Professor in Structural Mechanics at University of Perugia.

Since 2018 he is Associate Professor in Structural Mechanics at the Department of Civil and Environmental Engineering of University of Perugia.

As of September 2020, he has published over 25 articles on peer-reviewed journals and has an h-index 12.

Research topics

Analysis and reliability of historical buildings; Numerical analysis of masonry through the homogenization method and by means of limit analysis; Dynamics of cables (experimental test in wind tunnel, numerical models accounting for non-linear behaviour, fatigue analysis); Development of equivalent beam models for tall buildings under environmental loads (wind and earthquakes); Development of techniques for the identification of masonry texture through photographic and thermographic images; Analysis of non-local behaviour of solids by means of fractional Laplacian.

University teaching

He held seminars in several courses of civil engineering, building engineering and architecture and mechanical engineering. In 2011-12 he taught "Structural mechanics laboratory" for the Master Degree in Architecture and Construction-Architectural Engineering.

Since 2011-12 he teaches "Dynamics of structures" for the Master Degree in Civil Engineering.

He teaches "Python for the development of scientific application" for the Ph.D. program "International Doctoral Program in Civil and Environmental Engineering" at University of Perugia.

Peer-reviewed journals experience

From 2015 to 2019 he was Associate Editor of "International Journal of Masonry Research and Innovation" (Editor Prof. Gabriele Milani).

He has been reviewer for many international journals, among which: International Journal of Solids and Structures, Engineering Structures, Journal of Engineering Mechanics, Construction & Building Materials, Computers & Structures, Computer Methods in Applied Mechanics and Engineering, and others.

Research projects experience

F.C. participated to several research programs of the Italian Ministry of Instruction and Research at the University of Perugia:

- Research Unit of Perugia (Coordinator Prof. V. Gusella) of project "Wind and INfrastructures: Dominating Eolian Risk For Utilities and Lifelines" (Winderful)" – PRIN 2001.
- Research Unit of Perugia (Coordinator Prof. V. Gusella) of project "Life-cycle Performance, Innovation and Design Criteria for Structures and Infrastructures Facing Æolian and Other Natural Hazards (PERBACCO)" – PRIN 2003
- Research Unit of Perugia (Coordinator Prof. A.L. Materazzi) of project "VINCES - Vibrations in Civil Engineering Structures: source of damage and discomfort, diagnostic and safety assessment tool" – PRIN 2004
- Research Unit of Perugia (Coordinator Prof. V. Gusella) of project "Wind effects on slender structures: Performance-based Optimal Design (Wi-POD)" – PRIN 2007.
- Research Unit of Perugia (Coordinator Prof. V. Gusella) of project "Advanced mechanical modeling of new materials and structures for the solution of 2020 Horizon challenges " – PRIN 2015.
- Research Unit of Perugia (Coordinator Prof. V. Gusella) of project "Modelling of constitutive laws for traditional and innovative building materials" – PRIN 2017.

F.C. participated in several research project of Department of Civil and Environmental Engineering of University of Perugia.

Conference organization

F.C. contributed at organizing committees for:

2nd workshop "Vibration problems on civil structures and mechanical constructions" (Perugia, 2004); 3rd workshop "Vibration problems on civil structures and mechanical constructions" (Perugia, 2008); XI National Congress on Wind Engineering - IN-VENTO 2010 (Spoleto, July 2010); National Congress "AID MONUMENTS 2012" (Perugia, May 2012); National Congress "AID MONUMENTS 2014" (Perugia, May 2014); XIV National Congress on Wind Engineering - IN-VENTO 2016 (Terni, September 2016)

Participation to conferences

F.C. presented memories at over 30 national and international conferences, among which: several Conferences of Italian Association for Theoretical and Applied Mechanics (AIMETA), several Conferences of Italian Association for Wind Engineering (IN-VENTO); International Conference on Nonlinear Solid Mechanics ICoNSoM 2019; 9th International Masonry Conference; 4th International Conference on Experimental Vibration Analysis for Civil Engineering Structures (EVACES'11); 8th World Congress on Computational Mechanics (WCCM8).

For a complete list of research products:

<https://bit.ly/2FRUrCO>