FABRIZIO COMODINI

EDUCATION

UNIVERSITY OF PERUGIA — Perugia, ITALY
Doctor of Philosophy (PhD) — February 2009
Thesis: *Probabilistic evaluations of seismic capacity for building performance analyses.*
Advisor: Prof. Marco Mezzi

UNIVERSITY OF PERUGIA — Perugia, ITALY
Master degree — April 2003
Thesis: *Energy Approach to Pushover Analysis*
Advisor: Prof. Alberto Parducci

TEACHING EXPERIENCE

ECAMPUS UNIVERSITY — Novedrate, ITALY

Instructor, Department of Theoretical and Applied Sciences: Structural Design, University eCampus, Since 2010
Lectures and on-line programs

Instructor, Department of Theoretical and Applied Sciences: Advanced Structural Design, University eCampus, Since 2013
Lectures and on-line programs

Instructor, Department of Theoretical and Applied Sciences: Fundamentals of Earthquake Engineering University eCampus, Since 2020
Lectures and on-line programs

TEACHING INTERESTS

Seismic base isolation, seismic risk assessment of structures and infrastructures, seismic improvement of existing structures, seismic protection of structures and innovative structural systems.

LEADERSHIP AND SERVICE

Coordinator of the Bachelor's Degree Course in Civil and Environmental Engineering, Department of Theoretical and Applied Sciences, eCampus University, Novedrate, Italy. Since 2016

Coordinator of the Master's Degree Course in Civil Engineering, Department of Theoretical and Applied Sciences,eCampus University,Italy. Since 2018

Coordinator of the Quality Management Group of the Bachelor's Degree Course in Civil and Environmental Engineering, Department of Theoretical and Applied Sciences, eCampus University, Novedrate, Italy. Since 2016

Coordinator of the Quality Management Group of the Master's Degree Course in Civil Engineering, Department of Theoretical and Applied Sciences, eCampus University, Novedrate, Italy. Since 2018

Founding member of the University Spin Off "Antheus srl" participated by the University of Salento and the University eCampus, Italy.

Member of the University Research Center CREAT Energy, Environment and Territory at eCampus University, Novedrate, Italy. Since 2018

Member of the Board of Professors of the PhD Program on Sciences related to Welfare and Sustainability, University eCampus, from 2020 to 2022.

Member of the scientific committee and organizer of the conference Seismic Risk Prevention in Existing Constructions. eCampus University, Novedrate, Italy. 2016

Member of the organizing committee of the BRIDGE ITALY conference, eCampus University, Novedrate, Italy. 2017

PROFESSIONAL EXPERIENCE

ECAMPUS UNIVERSITY Novedrate, ITALY

International research projects

Member of the working team of the MEDEA research project (Multidimensional seismic risk assessment combining structural damages and psychological consequences using explainable artificial intelligence), funded by the EU (call UCPM-2023-KAPP-PREV). From 2022 to 2024.

Member of the working team of the SAFE-LAND project, Mitigating the Risk of Flooding and Landslides via Artificial Intelligence with a view to extreme climate events, funded by the European Commission (Call UCPM-2023-KAPP-PREV), 2023-present.

National research projects

Member of the working team of the ASThRO-Co project, Unified approach for improving structural and thermal response of masonry buildings with optimized

sustainable composite materials, funded by the Italian Ministry of Research and University, 2023-present

Member of the working team of the RELUIS-DPC Research Project, eCampus External Unit UR29 WP2 "Innovative materials for infrastructure interventions on existing buildings" Coordinator Prof. Francesco Focacci . 2014 - 2018 .

Member of the working team of the Research Project RELUIS-DPC, External Unit eCampus UR 9, WP14 " Contributions to technical standards on innovative materials for interventions on existing buildings " . Coordinator Prof. Francesco Focacci . 2019 - 2021.

Member of the working group of the research project PARIDE (Platform for the prevention of emergencies and the support of territorial safety), funded by the Italian Government (E87G23000120001). 2024 – present

Scientific Supervisor for eCampus University regarding the research agreement between eCampus University and the Department of Civil and Environmental Engineering at the University of Perugia, focusing on "development of joint research activities for the design and monitoring of civil structures in seismic zones". 2010 - 2020.

TECHNICAL SKILLS

Structural analysis, numerical modeling.

PUBLICATIONS

- A Parducci, F.Comodini, M.Mezzi (2004) , Approccio Energetico per le analisi "pushover". *In conference proceedings of XI Congresso Nazionale "L'ingegneria Sismica in Italia" Genova 25-29 gennaio 2004.*
- Parducci, F. Comodini, M. Lucarelli (2005). A synergic dissipation approach to retrofit framed structures with a soft first storey, *in proceedings of the 9th World Seminar on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures. Kobe (Japan), June 2005.*
- M. Mezzi, A. Parducci, F. Comodini, M. Lucarelli, E. Tomassoli (2006). Pseudo - Energy response spectra for the evaluation of the seismic response from pushover analysis, *in proceedings of the First European Conference on Earthquake Engineering and Seismology Geneva, Switzerland, 3-8 September 2006 .*
- M. Mezzi, A. Parducci, F. Comodini, M. Lucarelli, E. Tomassoli (2006). Energy-based non linear static analysis, *in proceedings of the First European Conference on Earthquake Engineering and Seismology Geneva, Switzerland, 3-8 September 2006 .*
- F. Comodini, M. Mezzi.(2007). Economic performance-based comparative analysis of isolated and fixed-based buildings, *in proceedings of the 10th World Seminar on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures Istanbul, Turkey, May 28-31, 2007*
- M. Mezzi. F. Comodini, (2008), Comparative economic assessment of r/c buildings with innovative seismic protection system, *in proceedings of the 14th WCEE World Conference on Earthquake Engineering, Cina, 12-17 Ottobre 2008*

- Goffrè M., Comodini F.,Cavalagli N (2009) . Analisi strutturale e vibrazioni del ponte "romano" a Pesciano di Todi, *in proceedings of the WONDER masonry 2009 Workshop on Design For Rehabilitation of Masonry Structures, Lacco Ameno, Ischia, 8-10 ottobre 2009.*
- Comodini F, Mezzi M (2010). Influence Of The Randomness Of The Mechanical Parameters On The Seismic Damage Assessment Of R/C Frames. *Third International fib Congress incorporating the PCI Annual Convention and Bridge Conference 2010. Washington D.C,, maggio 2010, vol. 4, p. 3740-3753, Red Hook, NY 12571 :Curran Associates, Inc. (2011), ISBN: 9781617828218*
- Comodini F, Mezzi M (2011). Performance Comparison of Isolated, Dissipated and Fixed-Based Steel Buildings. *In: 13th Int. Conf. on Civil, Structural and Environmental Engineering Computing. CIVIL-COMP PROCEEDINGS, Stirlingshire:B.H.V. Topping and Y. Tsompanakis, Civil-Comp Press, ISBN: 978-1-905088-47-8, ISSN: 1759-3433, Chania, Crete, Greece, 2011, doi: 10.4203/ccp.96.71*
- Mezzi M, Comodini F, Rossi L (2011). Base Isolation Option for the Full Seismic Protection of an Existing Masonry School Building. *13th Int. Conf. on Civil, Structural and Environmental Engineering Computing. CIVIL-COMP PROCEEDINGS, Stirlingshire:B.H.V. Topping, Civil-Comp Press, ISBN: 978-1-905088-47-8, ISSN: 1759-3433, Chania, Crete, Greece, 2011, doi: 10.4203/ccp.96.72*
- F. Comodini, M. Mezzi, L. Rossi (2013). Dissipative Devices for Vulnerability Reduction of Precast Buildings. *International Conference on Seismic Design of Industrial Facilities (SeDIF-Conference)RWHT,* Aachen, University Germany. *Springer DOI 10.1007/978-3-658-02810-7_2.* ISBN *978-3-658-02810-7*
- F. Comodini, M. Mezzi, L. Rossi,(2013) Precast Industrial Buildings in Italy - Current Building Code and New Provisions Since the 2012 *Earthquake International Conference on Seismic Design of Industrial Facilities (SeDIF-Conference)RWHT,* Aachen, University Germany. *Springer DOI 10.1007/978-3-658-02810-7_2, ISBN 978-3-658-02810-7.*
- F. Comodini, M. Mezzi, O. Niglio, A. Sarno (2013) Miglioramento sismico e rifunzionalizzazione della chiesa di San Benedetto Novello in Perugia*. AID Monuments, Perugia, Italia. Aracne Editrice (pag. 610-622) DOI: 10.4399/978885486506854*
- Comodini F., Fulco A., Mezzi M.(2014) Seismic capacity of buildings made with reinforced concrete panels cast with wood blocks system . *2nd European Conference on Earthquake Engineering and Seismology* ISNN *1872-4671.*
- Comodini F., Fulco A., Mezzi M. (2014). Results and analytical simulation of axial and diagonal compression tests on reinforced concrete panels cast with wood blocks system. *Bulletin of Earthquake Engineering. Springer DOI:10.1007/s10518-013-9566-9, ISSN 1570-761X (print version)1573-1456 (electronic version)*
- Comodini F., Mezzi M., Niglio O. , (2014). Assessment and seismic improvement with traditional and innovative technologies in the reuse design of San Benedetto Novello in Perugia. *International Journal of Architecture and Engineering,* Aracne Editrice ISSN 2384-9576 [print version], ISSN 2035-7982 [electronic version]
- Comodini F., Fulco A., Mezzi M. (2014) Seismic performances of a large lightly-reinforced walls construction system with thermal insulating form-blocks. *International Convention on Technical Sciences, Santiago de Cuba.* Universidad de Oriente, Cuba ISBN 978-959-207-529-0.

- Comodini F., Fulco A., D'alessandro A., Ubertini F., Mezzi M. (2015) Dispositivi passivi nodali per la protezione sismica di edifici prefabbricati in c.a.: abachi di ausilio alla progettazione, in conference proceedings ANIDIS "L'Ingegneria Sismica in Italia", XVI conference 13-17 September, L'aquila, Italy
- Comodini F., Fulco A., Mezzi M., Ubertini F., (2015) Valutazione Speditiva del Disturbo da Vibrazioni negli Edifici con Sistema di Isolamento alla Base Soggetti all'Azione del Vento, in conference proceedings ANIDIS "L'Ingegneria Sismica in Italia", XVI conference, 13-17 September, L'aquila, Italy.
- *C*omodini F., Fulco A., Mezzi M. (2015) Experimental vertical compression tests on reinforced concrete panels made with wood blocks system and theoretical evaluation of critical load. *Bulletin of Earthquake Engineering DOI: 10.1007/s10518-014-9653-6. ISSN 1570-761X (print version) ISSN 1573-1456 (electronic version)*
- Comodini F., Fulco A., Mezzi M (2015). Experimental, analytical and numerical analysis of the seismic behavior of large lightly r/c walls cast with wood blocks system. *Bulletin of Earthquake Engineering.* DOI 10.1007/s10518-015-9766-6 ISSN 1570-761X (print version) ISSN 1573-1456 (electronic version).
- M. Mezzi, F. Comodini, A. Fulco, (2015). Fast procedure to assess the risk of losses from earthquake in r/c buildings. *Convegno Internazionale Implementing Innovative Ideas In Structural Engineering and Project Management* . Sydney, Australia . ISBN: 978-0-9960437-1-7.
- Ubertini, F., Comodini, F., Fulco, A., Mezzi, M.,(2017) A Simplified Parametric Study on Occupant Comfort Conditions in Base Isolated Buildings under Wind Loading, *Advances in Civil Engineering Volume 2017, Article ID 3524975, 13 pages,https://doi.org/10.1155/2017/3524975*
- Comodini F., Mezzi M., Petrella P., Tomai, S., (2017) Comparison of methodologies for evaluating the seismic vulnerability of the sanctuary of Madonna della Libera in Pratola Peligna , *International Journal of Masonry Research and Innovation*, *2(2-3), pp. 202–219DOI: 10.1504/IJMRI.2017.10006813*
- Buffi G., Manciola P., De Lorenzis L., Cavalagli N., Comodini F., Gambi A., Gusella V.,Mezzi M.,Niemeier, W., Tamagnini, C., (2017), Calibration of finite element models of concrete arch-gravity dams using dynamical measures: The case of Ridracoli, *Procedia Engineering 199:110-115, DOI: 10.1016/j.proeng.2017.09.169*
- Comodini, F., La Brusco, A., Fulco, A., Mezzi, M.,(2017) Experimental tests and numerical analysis of corner connections bent about their axis in lightly reinforced concrete panels cast with wood block system, *Bulletin of Earthquake Engineering*, vol. 15, pages1661–1679, https://doi.org/10.1007/s10518-016-0038-x
- Comodini Fabrizio; Fulco Alessandro; Mezzi Marco (2017) Fast risk assessment of losses in r/c buildings, *In proceedings of 16th World Conference on Earthquake, 16WCEE, Santiago, Chile, January 09-13.*
- Siviero Enzo; Comodini Fabrizio; Focacci Francesco (2018), Philosophical Approaches for Conservation and Upgrade of the Cultural Heritage*, In 10th International Symposium on the*

Conservation of Monuments in the Mediterranean Basin, 20-22 September, Athens, Greece, ISBN:978-3-319-78092-4, DOI:10.1007/978-3-319-78093-1_5. pp.61-69.

- Comodini, Fabrizio; Fulco, Alessandro; Mezzi, Marco (2018), Performance of a building with dissipative bracing system under strong earthquakes, *In Proceedings of 16th European Conference on Earthquake Engineering,18 -21 June, Thessaloniki, Greece. Paper n.12034*
- Rossi L., Mezzi M., Comodini, F.,Parisi D., Ruggieri G. (2019), Using the empirical evidences of the 2012 Emilia-Romagna earthquake for assessing the convenience of seismic retrofitting measure on long-spanbeam structures, *XVIII Conference Anidis Ascoli Piceno*, Pisa University,Press,ID:4548250, Permalink:http://digital.casalini.it/10.1400/271083, Permalink:http://digital.casalini.it/4548250, DOI: 10.1400/271083
- Comodini F., Fagotti G., Mezzi M.,(2019) Effects of the earthquake vertical component in the masonry: Vertical collapse mechanisms?, *XVIII Conference Anidis Ascoli Piceno*, Pisa UniversityPress,ID:4548490, Permalink:http://digital.casalini.it/10.1400/271260, Permalink:http://digital.casalini.it/4548490, DOI: 10.1400/271260
- Fulco Alessandro; Comodini Fabrizio; Mezzi Marco (2019), Isolamento sismico a grande scala per la salvaguardia del tessuto urbano nella ricostruzione post-sisma, *XVIII Conference Anidis Ascoli Piceno, Pisa15-19Settembre*, University Press, ID:4548490, Permalink:http://digital.casalini.it/10.1400/271260,Permalink:http://digital.casalini.it/4548490 , DOI: 10.1400/271260
- Ierimonti, L., Venanzi, I., Cavalagli, N., Comodini, F., Ubertini, F., (2020) An innovative continuous Bayesian model updating method for base-isolated RC buildings using vibration monitoring data. *Elsevier Mechanical Systems and Signal Processing*, Volume 139, 106600, https://doi.org/10.1016/j.ymssp.2019.106600.
- Comodini Fabrizio; Mezzi Marco (2020), Vertical collapse mechanisms in masonry buildings due to seismic vertical component. *In proceedings of the 17th International Brick/Block Masonry Conference (17thIB2MaC), July 5-8 , Kraków, Poland, Brick and Block Masonry - From Historical to Sustainable Masonry p.1096*, CRC Press London, eBook ISBN9781003098508 https://doi.org/10.1201/9781003098508
- Alessandro Fulco, Marco Mezzi, Fabrizio Comodini (2020), Practical procedure to assess the expected consequences of earthquakes on buildings. *In proceedings of the 17th World Conference on Earthquake Engineering, 17WCEE Sendai, Japan - September 17$_{th}$to 18$_{th}$.*
- Comodini Fabrizio; D'Ambrisi Angelo; Mezzi Marco (2021), Nodal dissipative devices for seismic protection of precast rc structures, *COMPDYN 2021 8 th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering , European Community on Computational Methods in Applied Sciences Thematic Conference, An IACM Special Interest, Conference proceedings* - ISBN:978-618-85072-5-8 vol. Volume I DOI:10.7712/120121.8824.19434. pp.4772-4781.
- Fabrizio Comodini, Riccardo Panico and Salvatore Verre (2024), Seismic assessment of an existing R.C. irregular building by Non-Linear Static Analysis Extended, *in conference proceedings* MetroArchaeo 2024 "Metrology for Archeology and Cultural Heritage", Valletta, Malta, October 7-9

- Fabrizio Comodini, Riccardo Panico, Alessio Cascardi and Salvatore Verre (2024), A kinematic-aimed solution for the instability of masonry bell-tower: from design to application**,** *in conference proceedings* MetroArchaeo 2024 "Metrology for Archeology and Cultural Heritage", Valletta, Malta, October 7-9

PRESENTATIONS

Only the most recent ones are listed

International Conference AID Monument "The materials and techniques in the regeneration of the public architectural heritage", Perugia, Italy May 14-16, 2015
International Conference ANIDIS "L'Ingegneria Sismica in Italia", XVI Convegno, L'Aquila, Italy. Sept.13-17, 2015
Workshop : Research Project RELUIS DPC 2015 Line 6, University of Camerino , Camerino, Italy. Oct.10, 2015.
Workshop : Ricostruire, Recuperare ed Adeguare il Patrimonio Edilizio con Tecniche e Tecnologie ad Elevata Sicurezza Sismica , Norcia, Italy. Sept. 29, 2017
Workshop: RINFORZI STRUTTURALI FRCM : presidi antisismici resistenti al fuoco. Norcia, Italy. Dec. 5, 2017
Workshop : Research Project RELUIS DPC, WP3: Task 3.2 Dissipation and WP2: Seismic retrofitting of existing structures, Task 2.1 Seismic Isolation, Civil Protection, Roma, Italy. Dec. 12, 2017
Workshop Research Project RELUIS DPC, WP3: Task 3.2 Dissipation and WP2: Seismic retrofitting of existing structures, Task 2.1 Seismic Isolation, University of Naples, Napoli, Italy. Sept. 21, 2018
Workshop : : New strategies for reconstruction in the crater, confined masonry and historic centers. Department of Civil and Environmental Engineering, University of Perugia, Perugia, Italy. May 29, 2019
International Conference ANIDIS "L'Ingegneria Sismica in Italia", XVIII, Ascoli Pisceno Italia. Sept.15-19, 2019
17th Internationale Brick and Block Masonry Coference , IB2MAC, Cracovia , Polonia. Jul 5-8, 2020
COMPDYN 2021, 8th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, M. Papadrakakis, M. Fragiadakis (eds.), Atene , Grecia. Jun. 27-30, 2021

POSTERS

- F. Comodini, M. Mezzi (2007). Seismic hazard definition for the performance based design, *IUGG 2007– 10 July 2007 Perugia Italy*