



Francesco Cavalieri

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Gender: Male **Date of birth**: 24/07/1981 **Nationality**: Italian

ABOUT ME

He obtained Laurea (Bachelor's equivalent) in 2003, Laurea Specialistica (Master's equivalent) in 2006 and PhD in Civil Engineering in 2010, at the University of Cassino and Southern Lazio (Italy). In May 2018 he joined the European Centre for Training and Research in Earthquake Engineering (EUCENTRE) in Pavia. From May 2010 to April 2018 he was Research Associate at the Department of Structural & Geotechnical Engineering, Sapienza – University of Rome. He worked as participant in the EU-funded FP7 project SYNER-G (2009-2013). He is one of the main developers of OOFIMS (Object-Oriented Framework for Infrastructure Modeling and Simulation), an open-source simulation tool in MATLAB® language for the modeling and probabilistic analysis of interconnected/interdependent infrastructure systems and sets of buildings, at the urban/regional scale, in ordinary or “disturbed” conditions (i.e., due to the impact of a hazard). During his academic career, he was visiting scholar at Columbia University (New York, USA), the University of Canterbury (Christchurch, New Zealand), the University of Illinois at Urbana-Champaign (USA) and the French Geological Survey (BRGM site in Orléans, France). His research activity focuses on Earthquake Engineering, seismic reliability of structures and multi-hazard risk and resilience assessment of infrastructures, which are intended as “systems of systems” composed of buildings, critical facilities and lifelines (water, power, gas, transportation networks, etc.). He has authored or co-authored more than 30 peer-reviewed publications, among journal and conference papers and book chapters.

EDUCATION AND TRAINING

[12/2006 – 06/2010]

PhD - Philosophiae Doctor in Civil Engineering

University of Cassino and Southern Lazio

Address: Cassino (FR), Italy

Field(s) of study: Engineering and engineering trades

Thesis title: Dynamic Identification and Vibration-Based Damage Detection of Structures.

[12/2003 – 10/2006]

Laurea Specialistica (equivalent to Master's degree) in Civil Engineering

University of Cassino and Southern Lazio

Address: Cassino (FR), Italy

Field(s) of study: Engineering and engineering trades

Thesis title: Seismic reliability of water distribution networks in urban areas.

Final grade: 110/110 cum laude (top grade).

[08/2000 – 12/2003]

Laurea (equivalent to Bachelor's degree) in Civil Engineering

University of Cassino and Southern Lazio

Address: Cassino (FR), Italy

Field(s) of study: Engineering and engineering trades

Thesis title: Structural design of a strong floor for seismic tests on buildings.

Final grade: 110/110 cum laude (top grade).

WORK EXPERIENCE

[05/2018 – Current]

Researcher

European Centre for Training and Research in Earthquake Engineering (EUCENTRE) <http://www.eucentre.it/>

Address: Via Adolfo Ferrata 1, 27100, Pavia, Italy

Business or sector: Education

- Earthquake Engineering
- NAM Project: Soil-Structure Interaction, fragility curves of buildings
- Seismic reliability of buildings
- Precast reinforced concrete buildings
- Steel storage pallet racks
- Life-cycle assessment
- LS-DYNA and OpenSees modelling
- Matlab and Python programming

[04/2010 – 04/2018]

Research Associate

Department of Structural Engineering & Geotechnics, Sapienza - University of Rome <http://www.disg.uniroma1.it/>

Address: Via Antonio Gramsci 53, 00197, Rome, Italy

Business or sector: Education

- Earthquake Engineering
- Multi-hazard risk and resilience assessment of critical infrastructures, composed of buildings, critical facilities (e.g. hospitals) and networked systems or *lifelines* (e.g. water, power, gas, transportation networks). Development of simulation tools for critical systems resilience assessment
- Seismic reliability of structures
- Matlab programming

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 READING C2 WRITING C2

SPOKEN PRODUCTION C1 SPOKEN INTERACTION B2

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills

- Ability to understand and be understood
- Drafting skills

ORGANISATIONAL SKILLS

Organisational skills

- Prioritising and Organising skills
- Capacity to deliver in a structured way
- Planning capacity

JOB-RELATED SKILLS

Job-related skills

- Team spirit
- Learning and Development
 - Flexibility, e.g. openness towards new demands
- Working with Others
 - Sociability skills

- Diplomatic skills
- Confidentiality
- Availability to supervise students/postdocs

DIGITAL SKILLS

Microsoft Office | Social Media | LS-DYNA | SAP2000 | OpenSees | SeismoStruct | QGIS | AutoCad 2D3D | Maple | Python | Excellent programming skills in Matlab

ACTIVITIES AS VISITING SCHOLAR/RESEARCHER

Activities as Visiting Scholar/Researcher

One month spent (July 2017) in Orléans, France, at the Bureau de Recherches Géologiques et Minières (BRGM), Risks and Prevention Division, for a collaboration with Dr Pierre Gehl:

- Bayesian Networks applied to the probabilistic performance assessment of transportation networks.

Three months spent (January-April 2016) in Urbana-Champaign, IL, USA, at the University of Illinois at Urbana-Champaign, Department of Civil and Environmental Engineering, under the supervision of Prof Paolo Gardoni:

- Risk assessment of infrastructures: model calibration via Bayesian updating, based on observations of damage due to a generic hazard.

Three months spent (September-December 2014) in Christchurch, New Zealand, at the University of Canterbury, Department of Civil and Natural Resources Engineering, under the supervision of Dr Sonia Giovinazzi:

- Seismic reliability and resilience of lifelines (storm water, wastewater, electric power network).
- Increased Flooding Hazard (IFH) caused by the earthquake-induced damage to the pipeline storm water network.
- Extension of a probabilistic tool for civil infrastructures (Object-Oriented Framework for Infrastructure Modelling and Simulation, [OOFIMS](#)), to the probabilistic assessment of earthquake-altered flooding risk on the built environment.

Eight months spent (in the years 2008-2009) in New York, at Columbia University, Department of Civil Engineering and Engineering Mechanics, under the supervision of Prof Raimondo Betti:

- System identification and vibration-based damage detection of structures.
- Shake table experimental tests on a steel frame tested in the Carleton Laboratory (Dept of Civil Engineering and Engineering Mechanics), with the aim of structural identification and damage detection.
- Dynamic identification and damage detection of the CEED (Civil and Environmental Engineering Department) building at NCHU in Taichung, Taiwan, based on the Chi-Chi Earthquake strong motion data.

TEACHING ACTIVITY

Teaching activity

Courses given as Instructor:

- Integrated assessment and retrofitting of existing buildings. Doctoral course held at University School for Advanced Studies (IUSS) Pavia, Understanding and Managing Extremes (UME) Programme (November - December 2022). 10 hours given (out of 54 total hours), on seismic hazard and fragility analysis, record selection methods, IM-based methods, energy performance assessment of a building, analysis of critical infrastructure systems for estimation of downtime.

Courses given as Teaching Assistant:

- Earthquake Engineering. Sapienza - University of Rome (Prof. Paolo Franchin) (January 2014 - April 2018).
- Structural Design. Sapienza - University of Rome (Prof. Paolo Franchin) (January 2014 - April 2018).
- Structural Reliability. European School for Advanced Studies in Reduction of Seismic Risk (ROSE School) (Prof. Paolo Emilio Pinto, Prof. Paolo Franchin) (April 2011).
- Earthquake Engineering. University of Cassino and Southern Lazio (Prof. Maura Imbimbo) (January 2007 - December 2009).
- Structural Design. University of Cassino and Southern Lazio (Prof. Maura Imbimbo) (January 2007 - December 2009).

CONSULTANCY ACTIVITY

Consultancy activity

Ricerca sul Sistema Energetico – RSE S.p.A., based in Milan. Principal investigator in this project. Shake table experimental tests carried out at the Eucentre labs for the calibration of the numerical models (in OpenSees) of four instrument transformers (two current and two voltage transformers). Evaluation of their seismic fragility curves using Multiple-Stripe Analysis (MSA) with hazard-compatible records (September 2020 - December 2021). Technical report (in Italian): Cavalieri, F., Donelli, G., Pinho, R., Dacarro, F. (2021). Ottenimento di curve di fragilità di trasformatori di tensione e di corrente appartenenti a cabine elettriche primarie.

Mosayk S.r.l., based in Pavia.

- Research activity carried out for UniCredit S.p.A., evaluation of the joint annual rate of non-operability of two datacentres located in Verona (Italy). Probabilistic seismic hazard analysis using OpenQuake, fault-tree analysis considering non-structural components (January 2021). Technical report: Crowley, H., Caruso, M., Cavalieri, F., Tacci, M., Gabbianelli, G. (2021). Assessing the risk of simultaneous non-operativity of UniCredit's VR1 and VR2 datacentres.
- Research activity carried out within the NAM project, focusing on induced seismicity in the Groningen region (Northern Netherlands) and the seismic response characterization of masonry and precast buildings. Modelling of Soil-Structure Interaction (SSI) for unreinforced masonry buildings. Substructure approach, hybrid approach with macro-element, direct approach with nonlinear soil-block analyses (May 2018 - December 2020).
- Structural modelling, using software LS-DYNA, of buildings to be subjected to shake table test, before the execution of the test (blind prediction) (May - December 2018).

STUDIO SPERI SOCIETÀ DI INGEGNERIA S.r.l., based in Rome. Probabilistic seismic hazard analysis (PSHA) and site response analyses for a site located on the South coast of Timor Est. The activity has belonged to a larger consultancy activity, titled "Seismic hazard assessment and identification of the tsunami-genic sources for a project on the South coast of Timor", carried out by STUDIO SPERI for HR Wallingford Ltd, based in UK (September - October 2012).

OTHER ACTIVITIES

Other activities

Courses attended:

- Progettazione sismica di opere fondazionali, Eucentre, Pavia, 4 October 2019.
- Determinazione delle azioni sismiche sulle strutture: principi, metodi, strumenti, Eucentre, Pavia, 12 July 2019.
- Robustezza, analisi e progettazione di strutture soggette ad azioni estreme, Eucentre, Pavia, 22 February 2019.
- Building Information Modeling: gli strumenti e le procedure per la digitalizzazione della commessa, Eucentre, Pavia, 23-24 November 2018.

- Utilizzo consapevole della modellazione ad elementi finiti nel calcolo strutturale, Eucentre, Pavia, 19 October 2018.
- Python for beginners, Eucentre, Pavia, 5-6-12-13 October 2018.
- Python for computational science, CINECA center in Rome, 17-19 September 2013.
- Matlab per il calcolo scientifico, CASPUR (Consorzio Interuniversitario per le Applicazioni di Supercalcolo per Università e Ricerca) center in Rome, 20-21 October 2010.
- Affidabilità Strutturale, Sapienza - University of Rome, 21 April - 20 May 2009.
- New Approaches to Analysis and Testing of Mechanical and Structural Systems, Centro Internazionale di Scienze Meccaniche (CISM), Udine, 18-22 June 2007.

Laboratory activity, as intern:

- Shake table experimental tests carried out for the calibration of the numerical models (in OpenSees) of four instrument transformers (two current and two voltage transformers), at Eucentre, Pavia, Italy (March 2021).
- Data acquisition, in LabVIEW environment, from strain gauges, potentiometers and load cell, during debonding tests of FRP-strengthened bricks and beams, at Geolab Sud S.r.l., San Vittore del Lazio (FR), Italy (January - December 2007).
- Shake table experimental tests on a steel frame, with the aim of structural identification and damage detection, at ENEA - Casaccia Research Centre, Italy (October - December 2007).

Seismic damage recognition after the earthquake sequences in L'Aquila (2009) and Central Italy (2016).

CONFERENCES AND MEETINGS (PART 2)

Conferences and meetings (Part 2)

- NBSC 2022 - The New Boundaries of Structural Concrete - 6th edition - ACI-Italy Chapter, Lecce (Italy), 8-9 September 2022.
- 17WCEE - 17th World Conference on Earthquake Engineering, Sendai (Japan), 27 September - 2 October 2021 (Hybrid conference, online presentation).
- RISE Kick-off meeting, Zurich (Switzerland), 2-4 September 2019.
- COMPDYN 2019 - 7th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Crete (Greece), 24-26 June 2019.

CONFERENCES AND MEETINGS (PART 1)

Conferences and meetings (Part 1)

- SPONSE - 4th International Workshop on the Seismic Performance of Non-Structural Elements, Pavia (Italy), 22-23 May 2019.
- 16ECEE - 16th European Conference on Earthquake Engineering, Thessaloniki (Greece), 18-21 June 2018.
 - Co-organizer of Special Session SS16: Seismic risk and resilience of critical infrastructure.
- 16WCEE - 16th World Conference on Earthquake Engineering, Santiago (Chile), 9-13 January 2017.
 - Chairman of the General Session titled "Lifelines and electrical systems".
- IABMAS2016 - 8th International Conference on Bridge Maintenance, Safety and Management, Foz do Iguaçu (Brazil), 26-30 June 2016.
- ICASP12 - 12th International Conference on Applications of Statistics and Probability in Civil Engineering, Vancouver (Canada), 12-15 July 2015.
- Towards More Resilient Communities - 3rd UC Lifeline Week, Rome (Italy), 20-24 April 2015.

- Resilient Infrastructure: Research & Outreach Workshop, University of Canterbury, Christchurch (New Zealand), 4 December 2014. Presentation titled "Multi-Hazard risk assessment of civil infrastructures: methods and tools".
- National Lifelines Forum 2014, Wellington (New Zealand), 5-6 November 2014.
- Giornate AICAP 2014 – Strutture nel tessuto urbano – progetto e realizzazione del nuovo e di interventi sull'esistente, Bergamo (Italy), 22 May 2014.
- ICOSSAR 2013 – 11th International Conference on Structural Safety & Reliability, New York (USA), 16-20 June 2013.
- SYNER-G Final workshop, Milan (Italy), 21-22 March 2013.
- 15WCEE – 15th World Conference on Earthquake Engineering, Lisbon (Portugal), 24-28 September 2012.
- SYNER-G plenary meeting, Thessaloniki (Greece), 14-15 June 2012.
- OpenSeesDays, Sapienza - University of Rome, Rome (Italy), 24-25 May 2012.
- Invited seminar at doctoral school, titled "Seismic performance assessment of a complex Infrastructure: a conceptual & computational framework", presented, together with Professor Paolo Franchin, at the University G. D'Annunzio of Chieti-Pescara, School of Architecture, Pescara (Italy), 14 March 2012.
- SYNER-G WP2-4-5-7 workshop, Paris (France), 9-10 January 2012.
- SYNER-G WP5 workshop and second annual meeting, Orléans (France), 2-4 November 2011.
- SYNER-G WP7 workshop, Rome (Italy), 23 September 2011.
- SYNER-G mid-term meeting, Oslo (Norway), 28-29 April 2011.
- SYNER-G WP2-4-5 workshop, Rome (Italy), 8-9 November 2010.
- SYNER-G first annual meeting, Vienna (Austria), 15-17 September 2010.
- International Nigel Priestley Seminar (former UME School/ROSE Seminar), Pavia (Italy), 2011 to 2015, 2017 to 2019, 2022 editions.
- IOMAC'09 – 3rd International Operational Modal Analysis Conference, Portonovo (Italy), 4-6 May 2009.
- 2008 AISC Seminar, titled "Façade Attachments to Steel Frames", New York (USA), 6 November 2008.
- 3° Workshop sui problemi di vibrazioni nelle strutture civili e nelle costruzioni meccaniche, Università degli Studi di Perugia, Perugia (Italy), 11-12 September 2008.

PROJECTS (PART 2)

Projects (Part 2)

- Main contribution in the development of the software package Object-Oriented Framework for Infrastructure Modeling and Simulation ([OOFIMS](#)), a tool for the modeling of a set of interconnected/interdependent infrastructure systems (buildings, lifelines, critical facilities), at the urban/regional scale, in ordinary and "disturbed" conditions (e.g. due to the impact of a natural or man-made hazard) (May 2010 - present).
- EU-funded collaborative project RISE (Real-time earthquake risk reduction for a resilient Europe), Horizon 2020 research and innovation programme. Grant No. 821115. Role: Contributor in the Eucentre partner (September 2019 - Present) ([Link](#)).
- EU-funded collaborative project [SYNER-G](#) (Systemic Seismic Vulnerability and Risk Analysis for Buildings, Lifeline Networks and Infrastructures Safety Gain), Framework Programme 7 (FP7). Grant no. 244061. Role: Contributor in the Sapienza - University of Rome partner (May 2010 - March 2013).
- Project NAM. Groningen Field Seismic Hazard and Risk Assessment, modelling of URM buildings in support of damage fragility functions derivation, Soil-structure Interaction (SSI). Role: Consultant for Mosayk (May 2018 - December 2020) ([Link](#)).

- Project SAFENET (Seismic risk Assessment For transportation NETworks), three-year project funded by Fundação para a Ciência e a Tecnologia (FCT), the Portuguese national funding agency for science, research and technology. Development of a dynamic platform for the assessment of the impact of earthquakes on transportation networks and surrounding building stock. Role: Contributor especially relevant for the project - Eucentre partner (January 2023 - present).
- PRIN project 2022-25 - FIRMITAS: multi-hazard assessment, control and retrofit of bridges for enhanced Robustness using sMart IndusTriAlized Solutions. Role: Contributor in the IUSS Pavia Research Unit.
- Executive Project DPC-ReLUIIS 2022-24 - RINTC: Implicit seismic risk of code-conforming and existing structures. Role: Contributor in the Eucentre Research Unit.
- Executive Project DPC-ReLUIIS 2022-24 - WP5: Interventi di rapida esecuzione a basso impatto ed integrati. Role: Contributor in the Research Unit of University of Pavia, within Task 5.2 (Integrated evaluation methods).

PROJECTS (PART 1)

Projects (Part 1)

- Executive Project DPC-ReLUIIS 2015-2018 and 2019-2021 - RINTC: Implicit seismic risk of code-conforming and existing structures. Role: Contributor in the Eucentre Research Unit.
- Executive Project DPC-ReLUIIS 2019-2021 - WP5: Interventi di rapida esecuzione a basso impatto ed integrati. Role: Coordinator of activities for the Research Unit of University of Pavia, within Task 5.2 (Integrated and sustainable interventions for the renovation of existing buildings), and co-supervisor of a doctoral student.
- Executive Project DPC-ReLUIIS 2014-2018 - Project RS6: Rischio sismico delle reti e sistemi di distribuzione. Role: Contributor in the Research Unit of Sapienza - University of Rome.
 - Indici di operatività per la Condizione Limite per l'Emergenza (CLE): introduzione delle reti di utilità.
- Executive Project DPC-ReLUIIS 2010-2013 - Project RS4: Modelli di sicurezza per l'edilizia esistente. Role: Contributor in the Research Unit of Sapienza - University of Rome.
- Executive Project DPC-ReLUIIS 2010-2013 - Project 2.2.3: Impianti industriali, nucleari e lifeline. Role: Contributor in the Research Unit of Sapienza - University of Rome.
- University Project 2017 - Sapienza - University of Rome, Title: Assessing the seismic risk of functionality loss in hospitals caused by non-structural damage. Role: Contributor.
- University Project 2015 - Sapienza - University of Rome, Title: Increased Flooding Vulnerability of the Built Environment due to Earthquake-induced Damage. Role: Contributor. Grant no. C26H15KSBX.
- University Project 2014 - Sapienza - University of Rome, Title: Seismic performance of infrastructural systems in near-fault areas. Role: Contributor. Grant no. C26A14Z7WX.
- University Project 2013 - Start-up research - Sapienza - University of Rome, Title: Resilience analysis of interdependent critical infrastructural systems subjected to natural hazards: extension to the multi-hazard case. Role: Principal Investigator. Grant no. C26N13YSR2, Total funding amount: € 3.000.
- Research group for the development of CNR guidelines, titled "Istruzioni per la Valutazione Affidabilistica della Sicurezza Sismica di Edifici Esistenti" - CNR-DT 212/2013. Coordinators: Professor Paolo Emilio Pinto and Professor Paolo Franchin. Role: Contributor (September 2011 - July 2012).
- Research group for the drafting of fib Bulletin no 68, titled "Probabilistic performance-based seismic design". Coordinators: Professor Paolo Emilio Pinto and Professor Paolo Franchin. Role: Contributor (September 2011 - July 2012).
- University Project 2011 - Sapienza - University of Rome. Title: Modulo Abitativo Riciclabile Autocostruito Minimo Ecologicamente Ottimizzato. Role: Contributor.

EDITORIAL ROLES

Editorial roles

Member of the Editorial Board of Earthquake Engineering, specialty section of Frontiers in Built Environment (Frontiers), as Review Editor (December 2019 - present).

Member of the Editorial Board of Infrastructures (MDPI), as Topic Editor (April 2020 - present).

- Guest Editor for the Special Issue of Infrastructures (MDPI), titled "Seismic Reliability Assessment and Advances in Structural Modelling", belonging to the section "Infrastructures and Structural Engineering". Deadline 31 March 2023. More information at: https://www.mdpi.com/journal/infrastructures/special_issues/seismic_reliability (April 2020).

Reviewer of scientific papers for:

- Frontiers in Built Environment (Frontiers)
- Journal of Earthquake Engineering (Taylor & Francis)
- Sustainable and Resilient Infrastructure (Taylor & Francis)
- Earthquake Engineering and Structural Dynamics (Wiley)
- Computer-Aided Civil and Infrastructure Engineering (Wiley)
- Engineering Structures (Elsevier)
- Soil Dynamics and Earthquake Engineering (Elsevier)
- Reliability Engineering and System Safety (Elsevier)
- International Journal of Critical Infrastructure Protection (Elsevier)
- International Journal of Disaster Risk Reduction (Elsevier)
- Structures (Elsevier)
- Bulletin of Earthquake Engineering (Springer)
- SN Applied Sciences (Springer)
- Earthquake Spectra (SAGE)
- Advances in Civil Engineering (Hindawi)
- Infrastructures (MDPI)
- Sustainability (MDPI)
- Geosciences (MDPI)
- Geotechnics (MDPI)
- Applied Sciences (MDPI)
- Computation (MDPI)
- ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering
- ASME Journal of Pressure Vessel Technology

HONOURS AND AWARDS

Honours and awards

- European Personnel Selection: participation and success in the competency test, held in Rome on 9 July 2013, for EPSO/CAST/S/5/2013 - Researcher (FG IV), Quantitative Sciences, a database of candidates from which to recruit contract staff in function group IV (September 2013). Position transferred to COM/1/2015/GFIV (November 2016).
- Appointment: Visiting Scholar program, for the period of three months spent in Urbana-Champaign, IL, USA, at the University of Illinois at Urbana-Champaign, Department of Civil and Environmental Engineering (January 2016).
- Scholarship: Visiting Researcher program, for the period of three months spent in Christchurch, New Zealand, at the University of Canterbury, Department of Civil and Natural Resources Engineering (September 2014).
- Scholarship: Visiting Scholar program, Honors Center of Italian Universities H2CU, for the period of eight months spent in New York at Columbia University, Department of Civil Engineering and Engineering Mechanics (February 2008).
- Scholarship: Attendance of the PhD course in Civil Engineering at the University of Cassino and Southern Lazio (November 2006).

- Award: [Key scientific article](#), featured by [Advances In Engineering](#) (AIE), for *Steady-state flow computation in gas distribution networks with multiple pressure levels* (September 2017).
- Inclusion in the community of experts formed within the [e-SAFE](#) project, a four-year project funded under the Horizon 2020 programme and aiming at developing and demonstrating fast, cost-effective and tailorable integrated solutions for an energy-efficient and anti-seismic deep renovation of existing non-historic buildings (March 2021 - present).
- External reviewer, invited as an expert, of the research proposal titled "Seismic performance of tall buildings with basements considering soil-structure interaction", funded by National Fund for Scientific and Technological Research (FONDECYT, Chile) (November 2020).
- External reviewer, invited as an expert, of the research proposal titled "Risk assessment methods for the lifeline system in seismic emergency management", within the programme "Increasing Resilience to Natural Hazards in Earthquake Prone Regions in China (IRNHIC)", funded by Natural Environment Research Council (NERC, UK) (October 2015).
- Licence as Associate Professor in the Italian academic system, obtained on 11 October 2022 (validity 10 years).
- Licence as a professional engineer, obtained on 18 October 2007 at the University of Cassino and Southern Lazio.
- Member of the International Association for Bridge Maintenance and Safety (IABMAS) (August 2016 - present).
- Member of the International Exchange Alumni (March 2017 - present).

PUBLICATIONS - PAPERS FOR PEER-REVIEWED JOURNALS (PART 3)

Papers for peer-reviewed journals (Part 3)

1. Caruso, M., Pinho, R., Bianchi, F., Cavalieri F., Lemmo, M.T. (2022). Multi-criteria decision-making approach for optimal seismic/energy retrofitting of existing buildings. *Earthquake Spectra*. DOI: 10.1177/87552930221141917.
2. Cavalieri, F., Donelli, G., Pinho, R., Dacarro, F., Bernardo, N., de Nigris, M. (2022). Shake Table Testing of Voltage and Current Transformers and Numerical Derivation of Corresponding Fragility Curves. *Infrastructures*, 7(12), 171. DOI: <https://doi.org/10.3390/infrastructures7120171>. ([Link](#))
3. Cavalieri, F., Bellotti, D., Nascimbene, R. (2022). Seismic vulnerability of existing precast buildings with frictional beam-to-column connections, including treatment of epistemic uncertainty. *Bulletin of Earthquake Engineering*. DOI: <https://doi.org/10.1007/s10518-022-01574-x>. ([Link](#))
4. Cavalieri, F., Correia, A.A., Pinho, R. (2022). Comparative nonlinear soil-structure interaction analyses using macro-element and soil-block modelling approaches. *Bulletin of Earthquake Engineering*, 20, 3295–3328. DOI: <https://doi.org/10.1007/s10518-022-01379-y>. ([Link](#))

PUBLICATIONS - PAPERS FOR PEER-REVIEWED JOURNALS (PART 2)

Papers for peer-reviewed journals (Part 2)

1. Bosio, M., Di Salvatore, C., Bellotti, D., Capacci, L., Belleri, A., Piccolo, V., Cavalieri, F., Dal Lago, B., Riva, P., Magliulo, G., Nascimbene, R., Biondini, F. (2022). Modelling and seismic response analysis of non-residential single-storey existing precast buildings in Italy. *Journal of Earthquake Engineering*. DOI: <https://doi.org/10.1080/13632469.2022.2033364>. ([Link](#))
2. Kruiver, P.P., Pefkos, M., Meijles, E., Aalbersberg, G., Campman, X., Van der Veen, W., Martin, A., Ooms-Asshoff, K., Bommer, J.J., Rodriguez-Marek, A., Pinho, R., Crowley, H., Cavalieri, F., Correia, A.A., van Elk, J. (2022). Incorporating dwelling mounds into induced seismic risk analysis for the Groningen gas field in the Netherlands. *Bulletin*

- n of Earthquake Engineering, 20, 255–285. DOI: <https://doi.org/10.1007/s10518-021-01225-7>. ([Link](#))
3. Cavalieri, F., Correia, A.A., Pinho, R. (2021). On the Applicability of Transfer Function Models for SSI Embedment Effects. *Infrastructures*, 6(10), 137. DOI: <https://doi.org/10.3390/infrastructures6100137>. ([Link](#))
 4. Martins, L., Silva, V., Crowley, H., Cavalieri, F. (2021). Vulnerability modellers toolkit, an open-source platform for vulnerability analysis. *Bulletin of Earthquake Engineering*, 19, 5691–5709. DOI: <https://doi.org/10.1007/s10518-021-01187-w>. ([Link](#))
 5. Caruso, M., Pinho, R., Bianchi, F., Cavalieri, F., Lemmo, M.T. (2021). Integrated Economic and Environmental Building Classification and Optimal Seismic Vulnerability/Energy Efficiency Retrofitting. *Bulletin of Earthquake Engineering*, 19, 3627–3670. DOI: [10.1007/s10518-021-01101-4](https://doi.org/10.1007/s10518-021-01101-4). ([Link](#))
 6. Bressanelli, M.E., Bellotti, D., Belleri, A., Cavalieri, F., Riva, P., Nascimbene, R. (2021). Influence of Modelling Assumptions on the Seismic Risk of Industrial Precast Concrete Structures. *Frontiers in Built Environment*, 7:629956. DOI: <https://doi.org/10.3389/fbuil.2021.629956>. ([Link](#))
 7. Cavalieri, F., Correia, A.A., Pinho, R. (2021). Variations between foundation-level recordings and free-field earthquake ground motions: numerical study at soft-soil sites. *Soil Dynamics and Earthquake Engineering*, 132, 106511. DOI: <https://doi.org/10.1016/j.soildyn.2020.106511>. ([Link](#))
 8. Caruso, M., Pinho, R., Bianchi, F., Cavalieri, F., Lemmo, M.T. (2020). A Life Cycle Framework for the Identification of Optimal Building Renovation Strategies Considering Economic and Environmental Impacts. *Sustainability*, 12(23), 10221. DOI: <https://doi.org/10.3390/su122310221>. ([Link](#))
 9. Cavalieri, F., Franchin, P. (2020). Seismic Risk of Infrastructure Systems with Treatment of and Sensitivity to Epistemic Uncertainty. *Infrastructures*, 5(11), 103. DOI: <https://doi.org/10.3390/infrastructures5110103>. ([Link](#))
 10. Gabbianelli, G., Cavalieri, F., Nascimbene, R. (2020). Seismic vulnerability assessment of steel storage pallet racks. *Ingegneria Sismica*, 37(2), 18-40. ([Link](#))

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11. Rasulo, A., Cavalieri, F., Vanzi, I. (2007). Affidabilità sismica dei sistemi di distribuzione dell'acqua potabile in ambito urbano: metodologia di calcolo ed applicazione. ANIDIS 2007 – XII convegno - L'ingegneria sismica in Italia. Pisa (Italy), 10-14 June 2007.

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1. Reference Report-6: Systemic seismic vulnerability and loss assessment: Validation studies (April 2013). ([Link](#))
2. Reference Report-4: Guidelines for deriving seismic fragility functions of elements at risk: Buildings, lifelines, transportation networks and critical facilities (March 2013). ([Link](#))
3. Reference Report-1: Methodology for systemic seismic vulnerability assessment of buildings, infrastructures, networks and socio-economical impacts (January 2013). ([Link](#))

4. D6.3 – Application and validation study to a motorway system (Italy) (October 2012).
5. D6.4 – Application and validation study to an electric power system (Italy) (October 2012).
6. D5.5 – Systemic vulnerability and loss for transportation systems (June 2012).
7. D5.7 – Systemic vulnerability and loss for health care facilities (June 2012).
8. D5.2 – Systemic vulnerability and loss for electric power systems (October 2011).
9. D2.3 – Definition of system components and the formulation of system functions to evaluate the performance of electric power systems (June 2011).
10. D2.6 – Definition of system components and the formulation of system functions to evaluate the performance of transportation infrastructures (June 2011).
11. D2.1 – General methodology for systemic vulnerability assessment (April 2011).
12. D2.13 – A Review and Preliminary Application of Methodologies for the Generation of Earthquake Scenarios for Spatially Distributed Systems (March 2011).
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3. Cavalieri, F., Correia, A.A. (2019). Calibration and verification of a nonlinear macro-element for SSI analysis in the Groningen region. Report n. D14, Mosayk, Pavia, Italy (April 2019).
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PERSONAL DATA

Consent to process and use personal data

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.