

Giovanni Castellazzi

Curriculum Vitæ

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last update: September 9, 2025



Capsule Bio

Giovanni Castellazzi is an Associate Professor in Solids and Structural Mechanics at the Department of Civil, Chemical, Environmental, and Materials Engineering - University of Bologna and President of the Italian Association of Composites for Civil Engineering applications (AICO). He was a Post-doctoral Fellow at the University of California San Diego (UCSD) and completed his Ph.D. in structural mechanics at the University of Bologna. His research interests lie broadly in the field of computational mechanics but are primarily focused on the area of masonry structures: from coupled models for the study of mechanical degradation of porous materials to computational tools for the seismic assessment of masonry structures.

Who am I?

I am an Associate Professor in Solids and Structural Mechanics at the University of Bologna, and I have obtained the Italian National Scientific Qualification (ASN) as Full Professor in the field of Solid and Structural Mechanics. My research focuses on computational mechanics and, in particular, on the safety assessment of historical masonry structures.

Since 2025, I have been serving as Deputy Director of the Second Cycle Degree in Civil Engineering, while also holding the role of President of the Italian Association of Composites for Civil Engineering Applications (AICO) since 2023. In 2025 I chaired the international conference *MuRiCo8 – Mechanics of Masonry Structures Strengthened with Composite Materials* in Bologna.

I am also the scientific lead of a national PhD program project (PNRR DM352, 2023–2026) on eco-sustainable innovative materials for the seismic and energy upgrading of civil buildings. In parallel, I coordinate the research agreement between the Municipality of Bologna and the University of Bologna for the numerical modeling of the historic Garisenda Tower, with the first partial model delivered in February 2025.

Alongside my research and leadership activities, I am passionate about teaching. I currently lecture on *Mechanics of Historical Masonry Structures*, *Computational Structural Mechanics*, and *Solid Mechanics*, integrating theory, computational methods, and case studies.

Finally, I am actively involved in the development of open-source computational tools such as **Cloud2FEM** and **aLOTofImag-inArches**, designed to support the analysis and preservation of cultural heritage structures.

Positions, education, affiliations

Positions

- 2023–today **President**, *Italian Association of Composites for Civil Engineering applications*, www.aico-compositi.it, (Associazione Italiana Compositi AICO).
- 2025–today **Deputy Director**, *Second Cycle Degree in Civil Engineering*, University of Bologna, (<https://corsi.unibo.it/2cycle/CivilEngineering>).
- 2025–2037 **National Scientific Qualification (ASN)**, *Full Professor Qualification – Structural Mechanics (Sector 08/B2, First Tier)*, Italian Ministry of University and Research, Valid from 14/03/2025 to 14/03/2037.
- 2022–today **Faculty Member**, *PhD program in "Engineering and Information Technology for Structural and Environmental Monitoring and Risk Management - EIT4SEMM"*, ALMA MATER STUDIORUM - University of Bologna.

- 2021–today **Associate Professor**, *ALMA MATER STUDIORUM - University of Bologna*, DICAM Department.
- 2018–2021 **Senior Assistant Professor (RTDb)**, *ALMA MATER STUDIORUM - University of Bologna*, DICAM Department, (tenure track position).
- 2019–2020 **Committee Member**, *ALMA MATER STUDIORUM University inventory discharge commission*, (D.R. repertorio n. 21, p(roto)collo n. 2756 del 10.01.2019 - Triennio 2017-2019), (Commissione di Ateneo per gli scarichi inventariali - nomina rettorale).
- 2019–2023 **Committee Member**, *ALMA MATER STUDIORUM - Intake Committee - Two-Year Master degree in Civil Engineering*, (<https://corsi.unibo.it/2cycle/CivilEngineering/how-to-enrol>).
- 2021–2023 **Committee Member**, *ALMA MATER STUDIORUM - Intake Committee - Two-Year Master degree in Historic building rehabilitation*, (<https://corsi.unibo.it/2cycle/HistoricBuildings>).
- 2019–2023 **Master degree programme secretary**, *ALMA MATER STUDIORUM - Master degree in Civil Engineering*, (<https://corsi.unibo.it/2cycle/CivilEngineering>).
- 2020–2021 **Committee Member**, *ALMA MATER STUDIORUM - PhD@DICAM Intake Committee for admission to the Doctorate in Civil, Chemical, Environmental and Materials Engineering*, (36 cycle), (alternate member).
- 2021–2022 **Committee Member**, *ALMA MATER STUDIORUM - PhD@DICAM Intake Committee for admission to the Doctorate in Civil, Chemical, Environmental and Materials Engineering*, (37 cycle), (effective member).
- 2019–2023 **Vice-president**, *Italian Association of Composites for Civil Engineering applications*, www.aico-compositi.it, (Associazione Italiana Compositi AICO).
- 2017–2023 **National Scientific Qualification**, *Associate Professor 28/03/2017 al 28/03/2023 SSD 08/B2 – Solid Mechanics*.
- 2001–2018 **Laboratory technician support specialist**, *ALMA MATER STUDIORUM - University of Bologna*, DICAM Department, LAMC – DISTART (2001-2008); LAMC - DICAM (2009–2018).
- 2002–today **Iscrizione all'Albo degli Ingegneri**, *Albo degli Ingegneri della Provincia di Modena*, (MO) Italy.

Education

- 2009–2010 **Post-doctoral Fellow**, *University of California*, San Diego, Jacobs School of Engineering.
Ricerca finanziata sul tema *Multi-level schemes for explicit dynamics to track elastic/acoustic waves*
- 2008–2009 **Post-doctoral Fellow**, *University of California*, San Diego, Jacobs School of Engineering.
Ricerca finanziata sul tema *assumed-strain elements for incompressible media and plates*
- 2004–2007 **PhD student**, *PhD program in Structural mechanics*, XIX cycle, *University of Bologna*, Bologna, (3 Years).
- 2001 **Laurea in Civil Engineering**, (*Bachelor & Master of Science degree (major in Struttural Design)*), *ALMA MATER STUDIORUM - University of Bologna*, Bologna, (5 Years).

Affiliations

- 2019–today **RILEM staff member**, *International Union of Laboratories and Experts in Construction Materials, Systems and Structures - www.rilem.net*, RILEM Staff member #36459.
- 2018–today **Euromech Member**, *European Mechanics Society: an international non-governmental non-profit scientific organization*.
- 2018–today **SISCO Member**, *Italian Society of Solid Mechanics (Associazione Italiana di Scienza delle Costruzioni)*.
- 2014–today **AICO Member**, *Italian Association of Composites for Civil Engineering applications*, www.aico-compositi.it, (Associazione Italiana Compositi AICO).
- 2012 **SPIE Member**, *International Society for Optics and Photonics*, SPIE.
- 2011–today **AIMETA Member**, *Italian Association of Theoretical and Applied Mechanics (Associazione Italiana di Meccanica Teorica e Applicata)*, www.aimeta.it.
- 2009–2011 **ISSNAF Member**, *Italian Scientists and Scholars in North America Foundation*.

Teaching activity

Teaching Award

- 2020 **Best Teacher award**, *Best DICAM teacher for the Civil Engineering program, accademic year 2019/2020*, Course taught: Mechanics of Historical Masonry Structures.

Bachelor courses

- 2023–2025 **93649 - SCIENZA DELLE COSTRUZIONI T CON LABORATORIO - 6 CFU (Modulo 2)**, *Laurea in Architettura-ingegneria and Laurea Magistrale in Ingegneria dell'energia elettrica*, [Main Lecturer], (in Italian).
(60 teaching hours)

Master courses

- 2018–2025 **72772 - CALCOLO AUTOMATICO DELLE STRUTTURE M - 3 CFU (Modulo 2)**, *Master in Civil Engineering at the School of Engineering and Architecture in Bologna*, [Main Lecturer], (in Italian).
(24 teaching hours)
- 2019–2025 **72782 - MECHANICS OF HISTORICAL MASONRY STRUCTURES - 6 CFU**, *Master in Civil Engineering at the School of Engineering and Architecture in Bologna*, [Main Lecturer], (In English).
(48 teaching hours)

Other past teaching activities

- 2022–2023 **93649 - SCIENZA DELLE COSTRUZIONI T CON LABORATORIO - 6 CFU (Modulo 2)**, *Laurea in Architettura-ingegneria and Laurea Magistrale in Ingegneria dell'energia elettrica*, [Main Lecturer], (in Italian).
(48 teaching hours)
- 2018–2023 **75428 - HISTORIC MASONRY AND WOOD STRUCTURES M - 6 CFU (Modulo 1)**, *Master in Civil Engineering at the School of Engineering and Architecture in Ravenna - Historic Building Rehabilitation (HBR)*, [Main Lecturer], (In English).
(48 teaching hours)
- 2018–2019 **72782 - MECHANICS OF HISTORICAL MASONRY STRUCTURES - 3CFU**, *Insegnamento in Inglese*, Master in Civil Engineering at the School of Engineering and Architecture in Bologna, (In English).
(36 teaching hours)
- 2014–2018 **72772 - CALCOLO AUTOMATICO DELLE STRUTTURE M - 3CFU (Modulo 2)**, *Master in Civil Engineering at the School of Engineering and Architecture in Bologna*, (in Italian).
(26 teaching hours)
- 2006–2013 **Assistant**, *Computational Mechanics (Calcolo Automatico delle Strutture)*, corso di laurea in Ingegneria e Architettura, Sede of Bologna, ALMA MATER SUDIORUM University of Bologna.
Taught by Prof. Ing. Francesco Ubertini
- 2005–2012 **Assistant**, *Metodi Numerici per l'Ingegneria Civile LS*, Corso di laurea Ingegneria Civile - Laurea Specialistica, Sede of Bologna, ALMA MATER SUDIORUM University of Bologna.
Taught by Prof. Ing. Francesco Ubertini - Prof.ssa Fiorella Sgallari;
- 2010–2012 **Assistant**, *Mechanics of Historical Masonry Structures*, Corso di laurea Civil Engineering - Laurea Magistrale – Curriculum Structural Engineering - In lingua Inglese, Sede of Bologna, ALMA MATER SUDIORUM University of Bologna.
Taught by Prof. Ing. Angelo Di Tommaso;
- 2009 **Assistant**, *Finite Element Analysis [SE131]*, UCSD, University of California at San Diego.
Taught by Prof. Ing. Petr Krysl;
- 2003–2005 **Assistant**, *Piastre e Gusci LS, CCdL Ingegneria Meccanica, Ingegneria Energetica, Ingegneria Chimica e di Processo*, Sede of Bologna, ALMA MATER SUDIORUM University of Bologna.
Taught by Prof. Ing. Francesco Ubertini
- 2002–2004 **Assistant**, *Meccanica Computazionale delle Strutture, CCdL Ingegneria Civile, Ingegneria Edile*, Sede of Bologna, ALMA MATER SUDIORUM University of Bologna.
Taught by Prof. Ing. Francesco Ubertini
- 2002–2004 **Assistant**, *Laboratorio di Scienza delle Costruzioni, CCdL Ingegneria Edile*, Sede of Bologna, ALMA MATER SUDIORUM University of Bologna.
Taught by Prof. Ing. Francesco Ubertini

PhD students & research positions supervision

- 2022-2025 **Advisor, Tesi di dottorato** sul tema *"Innovative eco-sustainable materials for the energy and seismic improvement of civil buildings"* Dottorato di Ricerca in Ingegneria e tecnologia dell'informazione per il monitoraggio strutturale e ambientale e la gestione dei rischi – (EIT4SEMM) , Candidato: Nicolás Lo Presti.
- 2015-2018 **Co-advisor, Tesi di dottorato** sul tema *"Micro-modelling of masonry structures"* Dottorato in Ingegneria Civile, Chimica, Ambientale e dei Materiali, Candidato: Antonio Maria D'Altri.
- 2020-2021 **Advisor, Research grant** EXISTING BUILDING INFORMATION MODELING PER LA GESTIONE DELL'INTERVENTO SUL COSTRUITO ESISTENTE., L'assegno di ricerca è finanziato nell'ambito del progetto eBIM - existing Building Information Modeling per la gestione dell'intervento sul costruito esistente, finanziato dalla Regione Emilia-Romagna nell'ambito dei progetti regionali POR-FESR., Assegnista: Nicolo' Lo Presti.
- Sept-Dec-2021 **Advisor, Visiting Researcher** from Ivane Javakhishvili Tbilisi State University - Georgia, Effective modeling of complex unreinforced masonry buildings, researcher: Dr. Nino Tabatadze.

Master and Bachelor students supervision

- 2025 **Bachelor thesis**, *Capriate: studio del comportamento strutturale e analisi statica.*
- 2025 **Bachelor thesis**, *Dal ramo all'ingegneria: ottimizzazione ispirata agli alberi.*
- 2025 **Bachelor thesis**, *Opere Provvisoriale per il Patrimonio Culturale in Emergenza Sismica: Metodologie, Tecniche e Applicazioni.*
- 2025 **Bachelor thesis**, *Struttura e forma: l'arte costruttiva di Pier Luigi Nervi.*
- 2025 **Master thesis**, *Analyzing the Impact of FRP Reinforcement on the Collapse Mechanisms of Masonry Arches.*
- 2025 **Master thesis**, *Cultural Heritage Structural Conservation: Computational Approaches for Scan-to-FEM Model Generation.*
- 2024 **Master thesis**, *Guardare al futuro per proteggere il passato: una nuova prospettiva di conservazione con la modellazione predittiva.*
- 2025 **Master thesis**, *Implementing BIM for Existing Buildings: Structural Modeling Challenges and IFC Evolution.*
- 2024 **Master thesis**, *Preserving the past with modern techniques: Cloud2FEM and Artificial Intelligence for accurate meshing and analysis of historic structures.*
- 2024 **Master thesis**, *From Point Cloud to Structural Analysis: Safeguarding Cultural Heritage.*
- 2024 **Bachelor thesis**, *Il Traguardo delle Forme: L'Evoluzione dell'Arco fino alla Sintesi Perfetta tra Struttura e Architettura nel Gotico.*
- 2024 **Bachelor thesis**, *Struttura e forma: l'arte costruttiva di Pier Luigi Nervi.*
- 2023 **Master thesis**, *Computational Analysis Based on Parametric Models of Historic Masonry Vaulted Structures Strengthened by Fiber-Reinforced Composite Materials.*
- 2023 **Master thesis**, *Generation of BIM Models from Clouds of Points in Heritage Buildings.*
- 2022 **Master thesis**, *La creazione di un Digital Twin per l'analisi strutturale di edifici storici: la sfida dell'integrazione di diverse tecnologie.*
- 2022 **Master thesis**, *Nonlinear modelling of non-structural masonry walls under a low-intensity earthquake motion: calibration through a parametric study.*
- 2021 **Master thesis**, *Advanced numerical modeling of masonry vaulted structures based on BIM parametric geometry generation.*
- 2020 **Master thesis**, *Advanced numerical simulation for the structural analysis of infill-masonry walls..*
- 2020 **Master thesis**, *Arricchimento semantico nel contesto dell'Existing Building Information Modelling: aspetti metodologici e applicazione al caso della Rocca Estense di San Felice sul Panaro..*
- 2020 **Master thesis**, *Damage mechanisms in porous building materials due to salt crystallization: formulation of equivalent materials for masonry.*
- 2020 **Master thesis**, *First aid interventions for an italian gothic church: San Francesco in Bologna.*
- 2020 **Master thesis**, *Funicular solutions for masonry vaults: a review of recent and past numerical methods.*
- 2020 **Master thesis**, *HBIM methodology for structural preservation of historical buildings: the semantic modeling of the San Felice sul Panaro fortress.*

- 2020 **Master thesis**, *Interoperabilità BIM nella modellazione strutturale di edifici storici in muratura: il caso della Rocca Estense di S. Felice sul Panaro.*
- 2020 **Master thesis**, *On the seismic behavior of unreinforced masonry buildings with complex geometry: numerical modeling and experimental characterization.*
- 2019 **Master thesis**, *Modellazione e analisi numerica di cisterne per trasporto di liquidi pericolosi.*

Seminars organized for master courses

- 2019 **Seminar**, *Modeling strategies for the computational analysis of masonry structures*, Speaker: Dr. A.M. D'Altri - University of Bologna, organized for *Mechanics of Historical Masonry Structures* master students.
- 2019 **Seminar**, *Discrete Element Method for the analysis of masonry vaults*, Speaker: Prof. D. Ferretti - University of Parma, organized for *Mechanics of Historical Masonry Structures* master students.
- 2020 **Seminar**, *First AID interventions for historical masonry structures*, Speaker: Dr. L. Ferrari - University of Parma, organized for *Historical Masonry and Wood Structures* master students.

Other teaching related activities

- 2020-2025 **Development of open-source computing codes - aLOToflmaginArches**, *Matlab App for the graphical analysis of masonry arches*, **aLOToflmagineArches** is an opensoure Matlab educational software that allows for interactive demonstrations that involve the user in experimentation with the funicular solution concept. The tool is designed for the master students of the courses MHMS and HMWS and is mainly useful to capture the idea of ∞^3 funicular solutions for masonry arches., <https://github.com/gcastellazzi/aLOToflmaginArches>.
(see "Development of open-source computing codes" section)
- 2010–2018 **co-Advisor**, *Master thesis co-advisor of several thesis developed at the LAMC Laboratory of Computational Mechanics.*
- 2001–2008 **co-Advisor**, *Master thesis co-advisor of several thesis developed at the LAMC Laboratory of Computational Mechanics.*
- 2001–2008 **Organization**, *Teaching activity support delivered at the Laboratory of Computazional Mechanics (LAMC) for all the courses delivered by the deparment using the LAMC facilities.*

Scientific Activities

Awards & scholarship to foster research

- 2016 **Poster Award**, *INTERNATIONAL CAE CONFERENCE 17/10/2016*, Parma, first prize.
- 2010 **Paul Harris Fellow**, *Paul Harris Rotary Foundation, Rotary International*, Bologna, Italia.
- 2010 **Travelling conference award**, *Second International Meeting on the Effects of Noise on Aquatic Life*, Cork, Ireland.
- 2008 **Paul Harris Fellow**, *Paul Harris Rotary Foundation, Rotary International*, Del Mar, USA.
- 2008 **Scholarship**, *Rotary Foundation scholarship (national selection) to foster research program in USA Universities*, (@UCSD San Diego, Structural Department).

Invited lectures

- 2024 **Lecture**, *Recenti sviluppi di tematiche sui compositi per le strutture murarie - Accademia delle Scienze di Bologna*, (su invito del Prof. Angelo Di Tommaso).
- 2020 **Seminar**, *Multiphase modeling for hygro-thermo-mechanical analysis of historical masonry structures - 31/01/2020*, Department of Civil Engineering - Institute for Sustainability and Innovation in Structural Engineering, University of Minho, (su invito del Prof. Paulo Lourenco).
- 2018 **Seminar**, *Advanced numerical modelling of historical monumental masonry buildings - 20/04/2018*, Delft, Netherlands, (su invito del Prof. Jan Rots).
- 2018 **Lecture**, *Florence Heri-Tech - On the generation of numerical models from point clouds for the analysis of damaged Cultural Heritage*, (Su invito della Prof.ssa Grazia Tucci), Salone dell'Arte e del Restauro di Firenze.
- 2013 **Lecture**, *SAIE Case Histories: dal sisma alla ricostruzione di edifici produttivi Ing. Giovanni Castellazzi - Serital s.r.l, San Felice sul Panaro. Modena* (su invito del Prof. Marco Savoia).
- 2013 **Key-Note Lecture**, *CFRAC 2013 - The Third International Conference on Computational Modeling of Fracture and Failure of Materials and Structures - Fictitious elastic stiffness parameters of zero-thickness interface elements to recover accurate nodal stresses - (Minisymposium organized by I. Carol, UPC Barcelona, Spain and G. Pijaudier-Cabot, University of Pau, France and dedicated to the 75th anniversary of Professor Zdeněk P. Bažant)*.
- 2011 **Seminar**, *Elasto-dinamica agli elementi finiti. Applicazione all'apparato uditivo degli odontoceti - Seminario per la Scuola di Dottorato in Ingegneria Civile ed Architettura – Dottorato in Ingegneria Strutturale ed Idraulica* (su invito del coordinatore del Dottorato).
- 2011 **Lecture**, *Nodal Patch Averaged Strain elements for nearly incompressible solids - Minisimposia on Recent Advances in Node Based Element Technology organized by Jesse Thomas, Nathan Crane, Samuel Key for the 11th US National Congress on Computational Mechanics, Minneapolis, Minnesota (USNCCM-11)* (su invito di Jesse Thomas).
- 2009 **Seminar**, *San Diego State University - Department of Aerospace and Engineering Mechanics. Titolo del Seminario: Assumed Strain Finite Elements for Reissner-Mindlin Plate Structures* (su invito del Prof. Luciano Demasi).

Conferences Organization

- 2025 **Chair**, *MuRiCo8 International Conference - Mechanics of Masonry Structures strengthened with Composite Materials – Bologna 2025* (eventi.unibo.it/murico8).
- 2024 **Chair**, *Prevenzione antisismica del costruito - Resilienza indotta (via FRP/FRCM), isolamento alla base, apporto dissipativo o esoscheletro - Ricostruzione post-sisma di beni architettonici - Accademia delle Scienze di Bologna – 25 gennaio 2024*.
- 2021 **Member of the Steering Committee**, *MuRiCo7 International Conference - Mechanics of Masonry Structures strengthened with Composite Materials Modeling, testing, design, control – Bologna 2021* (eventi.unibo.it/murico7).
- 2019 **Member of the Steering Committee**, *MuRiCo6 International Conference - Mechanics of Masonry Structures strengthened with Composite Materials Modeling, testing, design, control – Bologna 2019* (eventi.unibo.it/murico6), [117].
- 2018 **Organizing Committee Member**, *ESMC2018 - European Solid Mechanics Conference* www.esmc2018.org.

- 2018 **Organizing Committee Member**, *Workshop di presentazione degli studi di recupero per la Rocca Estense di San Felice sul Panaro*, (Evento pubblicizzato sulla pagine "DICAM Eventi" e su "UNIBO Magazine").
- 2017 **Member of the Steering Committee**, *MuRiCo5 International Conference - Mechanics of Masonry Structures strengthened with Composite Materials Modeling, testing, design, control – Bologna 2017* (eventi.unibo.it/murico5), [116].
- 2017 **Co-chairman**, *Mynisimposium Computational Strategies for the seismic assessment of Cultural Heritage Masonry Structures for the international conference COMPDYN2017, Rodi*, [76].
- 2015 **Organizing Committee Member**, *Membro del Comitato Organizzatore del XXII Congresso dell'associazione Italiana di Meccanica Teorica e Applicata AIMETA2015 Genova 14-17 Settembre 2015*.
- 2014 **Member**, *Membro ed organizzatore del Comitato di studio composto da esperti delle University of Bologna, Ferrara, Parma e Genova che sta analizzando la vulnerabilità della Rocca Estense di San Felice sul Panaro, creando i presupposti per il suo consolidamento e per il progetto di recupero architettonico e funzionale*. Sito web: www.roccaestense.dicam.unibo.it.
- 2014 **Organizing Committee Member**, *MuRiCo5 International Conference - Mechanics of Masonry Structures strengthened with Composite Materials Modeling, testing, design, control – Ravenna 9-11 Settembre 2014* (www.murico4.dicam.unibo.it), [115].
- 2013 **Organizing Committee Member**, *International Symposium on Design and Practice of Geosynthetic-Reinforced Soil Structures - Honoring Research Achievement of Prof. Dov Leshchinsky - Joint Sessions with 26th Italian National Conference on Geosynthetics 14-16 October, 2013 Bologna, Italy*.
- 2011 **Organizing Committee Member**, *XX Congresso dell'associazione Italiana di Meccanica Teorica e Applicata AIMETA2011 12-15 Settembre 2011*, [114].
- 2011 **Organizing support**, *Ideazione realizzazione e amministrazione del sito web per la gestione delle memorie del XX Congresso dell'associazione Italiana di Meccanica Teorica e Applicata AIMETA2011 12-15 Settembre 2011*.
- 2010 **Organizing support**, *Ideazione realizzazione e amministrazione del sito web per la gestione delle memorie del XVIII Convegno Italiano di Meccanica Computazionale – GIMC2010, Catania 22-24 settembre 2010*.
- 2008 **Organizing support**, *Ideazione realizzazione e amministrazione del sito web per la gestione delle memorie del XVII Convegno Italiano di Meccanica Computazionale – GIMC2008, Alghero 10-12 settembre 2008*.
- 2007 **Organizing support**, *Collaboratore all'organizzazione del workshop della European Construction Technology Platform, Focus Area Cultural Heritage – WG4, Bologna 17 dicembre 2007*.
- 2006 **Organizing Committee Member**, *XVI Convegno Italiano di Meccanica Computazionale – GIMC2006, Bologna 26-28 giugno 2006*, [113].
- 2006 **Organizing support**, *Ideazione realizzazione e amministrazione del sito web per la gestione delle memorie del XVI Convegno Italiano di Meccanica Computazionale – GIMC2006, Bologna 26-28 giugno 2006*.

Research Projects

- 2024–today **Member**, *Research agreement between the Municipality of Bologna and the University of Bologna (DICAM), Numerical modeling of the historic Garisenda Tower – first partial model delivered in February 2025*.
- 2023–2026 **Responsabile**, *Corso di dottorato 38 ciclo PNRR ex DM352 in Engineering and Information Technology for Structural and Environmental Monitoring and Risk Mgm -Prog Materiali innovativi ecosostenibili- Ente Edilteco SpA tutor, PNRR-DOTT352-N9-EIT4SEMM-CASTELLAZZI*.
- 2020–2023 **Member**, *CRYSTINART Crystallization damage at the interfaces of artworks, JPICH Conservation, Protection and Use Call on Cultural Heritage*.
- 2019–today **Member**, *EBIM project - Existing Building Information Modeling for the management of existing buildings - aims to implement the digitalization of the building process applied to the built heritage. The project is co-funded by Emilia-Romagna Region in the fields of the European Regional Development Fund (POR FESR 2018-2020) , C. Mazzotti, S. de Miranda, G. Castellazzi, A.M. D'Altri, G. Bitelli (CIRI-UNIBO)*.



- 2019–2021 **Member**, *ReLUIs 2019-2020 – Linea Costruzioni in Muratura - WP10 Contributi Normativi relativi a Costruzioni Esistenti in Muratura*, S. Cattari, S. Degli Abbati, D. Ottonelli 3 (UNIGE); G. Magenes, C.F. Manzini, P. Morandi (UNIPV); E. Spacone, C. Marano, G. Camata (UNICH); I. Calì, B. Pantò, F. Canizzaro, G. Occhipinti (UNICT); B. Calderoni, A. De Luca, G. Brandonisio, A.E. Cordasco (UNINA); S. de Miranda, G. Castellazzi, A.M. D'Altri (UNIBO); G. Milani (POLIMI).
- 2016–2018 **Member**, *ReLUIs 2017 – Linea Costruzioni in Muratura - Temi Generali e Temi Territoriali - WP4.3 Report di sintesi e confronto delle simulazioni numeriche sui casi studio benchmark rappresentativi di edifici reali danneggiati*, S. Cattari, S. Degli Abbati, D. Ottonelli 3 (UNIGEc); G. Magenes, C.F. Manzini, P. Morandi (UNIPV); E. Spacone, C. Marano, G. Camata (UNICH); I. Calì, B. Pantò, F. Canizzaro, G. Occhipinti (UNICT-a); B. Calderoni, A. De Luca, G. Brandonisio, A.E. Cordasco (UNINA b/d); A. Tralli, S. de Miranda, G. Castellazzi, A.M. D'Altri (UNIFE-UNIBO); A. Saetta (IUAV).
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- 2013-2016 **Member**, *KISADAMA - Kinetic of Salt Crystallization and Mechanical Damage in Historic Masonry*, JHEP PILOT CALL, JPI on Cultural Heritage, www.kisadama.eu.
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- 2010-2012 **Member**, *3ENCULT – Efficient Energy for EU Cultural Heritage, FP7-2010, Progetto della Comunità Europea*. Project Ref.: 260162, FP7-2010-NMP-ENV-ENERGY-ICT EeB.ENV.2010.3.2.4-1 - www.3encult.eu.
- 2007-2009 **Member**, *SMooHS – Smart Monitoring of Historic Structures*, Unità of Bologna, Progetto della Comunità Europea, ENV.2007.3.2.1.1 - Project Ref.: 212939.
- 2010 **Member**, *Identificazioni di occlusioni in reti di condotte per il trasporto di fluidi monofasici*, Direzione Ricerca e Sviluppo Tecnologico, Divisione R&M, ENI s.p.a. (www.eni.com).
- 2010 **Member**, *Sviluppo di telai in alluminio ad uso veicolistico di innovativa concezione sotto il profilo della sicurezza del mezzo e dell'uso di un sistema di produzione per fusione ed incollaggio dei semilavorati*, PRRIITT Programma regionale per la ricerca industriale, l'innovazione e il trasferimento tecnologico.
- 2008 – 2010 **Member**, *Affidabilità dell'analisi computazionale di strutture*, Unità of Bologna, PRIN2007, MIUR, responsabile Prof. F. Ubertini (nell'ambito del programma "Modellazione ed analisi, su base prestazionale, di strutture non lineari", coordinatore Prof. R. Casciaro).
- 2009 **Member**, *Metodo inverso per la stima dei parametri incogniti in reti di approvvigionamento olio e gas*, Direzione Ricerca e Sviluppo Tecnologico, Divisione R&M, ENI s.p.a. (www.eni.com).
- 2008-2010 **Member**, *Multi-level schemes for explicit dynamics to track elastic-acoustic waves in biological specimens (in particular baked whales)*, in cooperation with University of California at San Diego, Scripps Institution of Oceanography, US Navy. Principal Investigator Professor Petr Krysl.
- 2008-2010 **Member**, *Assumed-strain elements for incompressible media and investigations of locking-free response*, University of California at San Diego. Principal Investigator Professor Petr Krysl.
- 2006 - 2008 **Member**, *Homogenization of elementary cells of masonry by means of the Cell Method*, PRIN2006 - Research Unit of Bologna, coordinator: Prof. A. Di Leo.
- 2006-2007 **Member**, *Dal rilievo all'analisi strutturale di costruzioni romane nell'area vesuviana*, Unità di ricerca of Bologna, PRIN2005 responsabile Prof. F. Ubertini.
- 2007-2009 **Member**, *Partecipazione alle attività del un gruppo di ricerca del progetto PRIN2005 "Multiscale approach for the safeguarding of archaeological masonry constructions in Herculaneum: from survey and modeling to diagnostic and evaluation"*, Unità di ricerca of Bologna responsabile Prof. A. Zanutta.
- 2004-2006 **Member**, *Linee guida per la sorveglianza e la gestione delle strutture e infrastrutture storiche con il supporto di tecniche innovative per il monitoraggio strumentale*, Unità di ricerca of Bologna, PRIN2004 responsabile Prof. Antonio Di Leo.
- 2004-2006 **Member**, *Modelling and analysis in structural mechanics*, Ricerca Fondamentale Orientata, Responsabile Prof. Francesco Ubertini.
- 2002-2003 **Member**, *Modelling and analysis of the behavior of materials and structures*, Ricerca Fondamentale Orientata, Responsabile Prof. Francesco Ubertini.
- 2004 **Member**, *Convenzione di ricerca con la ditta EDISON spa* (www.edison.it).

- 2003 – 2005 **Member**, *Pompei, Insula IX 8: sperimentazione e modellazione di materiali e strutture*, Unità of Bologna, PRIN2003, MIUR, responsabile Ing. A. Custodi (nell'ambito del programma "Pompei, Insula IX 8: ricerche archeologiche e archeometriche per la conoscenza, la conservazione e la valorizzazione dell'edilizia pompeiana", coordinatore Prof. D. Scagliarini).
- 2014–2018 **Member**, *Partecipazione alle attività del gruppo di ricerca formato dalle University of Bologna, Ferrara, Parma, Modena-Reggio Emilia e Genova, finalizzato allo studio della vulnerabilità ed alla proposta di recupero della Rocca Estense di San Felice sul Panaro (Modena) a seguito degli eventi sismici del maggio 2012*. Unità of Bologna: modellazione numerica dell'edificio.
- 2012 **Member**, *Partecipazione alle attività del un gruppo di ricerca del prof. Ivan Bartoli - Drexel University, Philadelphia, PA (USA) sul tema "numerical and experimental analysis of structural components for nondestructive inspection"*, Philadelphia, USA, 23-03-2012 al 31-03-2012.
- 2009–2010 **Member**, *Partecipazione alle attività del un gruppo di ricerca del progetto PRRIITT2009 "Sviluppo di telai in alluminio ad uso veicolistico di innovativa concezione sotto il profilo della sicurezza del mezzo e dell'uso di un sistema di produzione per fusione ed incoraggio dei semilavorati"*, Regione Emilia Romagna.
- 2011–2013 **Member**, *Partecipazione alle attività del un gruppo di ricerca del progetto ITALICI2011 "Innovazione e Tradizione per l'avanzamento tecnologico dei laterizi e l'internazionalizzazione del costruire Italiano", Progetto di Innovazione Industriale "Made in Italy" Ministero dello Sviluppo Economico.*

Editorial Activities

- 2023–today **Guest Editor**, *Heritage*, Special Issue "Architectural Heritage Management in Earthquake-Prone Areas". Electronic ISSN: 2571-9408
- 2022–2024 **Guest Editor**, *Rising Stars in Computational Methods in Structural Engineering: 2022*, Special Issue - recognising the future leaders of Computational Methods in Structural Engineering is fundamental to safeguarding tomorrow's driving force in innovation.. Electronic ISSN: 2297-3362
- 2022–2024 **Guest Editor**, *Recent Trends in Historic Masonry Building Assessment Principles Models Methods and Practices*, Special Issue - Int. J. of Masonry Research and Innovation (IJMRI). ISSN 20569459, 20569467
- 2020–today **Editorial Board**, *Heritage Journal*, *Heritage* is an international, peer-reviewed, open access journal of cultural and natural heritage science published quarterly by MDPI. The publication focuses on knowledge, conservation and management of cultural and natural heritage by sensing technologies, novel methods, best practices and policies.. ISSN 2571-9408
- 2020–today **Review Editor**, *Frontiers in Computational Methods in Structural Engineering, Special section of Frontiers in Building Engineering* This new section aims to bridge the gap between numerical methods and computational mechanics in the broader field of structural engineering. Electronic ISSN: 2297-3362
- 2012–today **Editorial Team Member**, *Mechanical Engineering Research Journal*, an international, double-blind peer-reviewed, open-access journal. Mechanical Engineering Research is published by the Canadian Center of Science and Education in both print and online versions. ISSN 1927-0607 (Print) ISSN 1927-0615 (Online)
- 2022 **Editor**, *Proceedings of the 7th International Conference on Mechanics of Masonry Structures Strengthened with Composite Materials (MuRiCo 2021)*, Bologna, Editore. ISBN: 978-3-0364-1049-4 Editors: G. Castellazzi, C. Gentilini and A. Di Tommaso [118]
- 2019 **Editor**, *Proceedings of the 6th International Conference on Mechanics of Masonry Structures Strengthened with Composite Materials (MuRiCo 2019)*, Bologna, Editore. ISBN: 978-303571565-1 Editors: A. Di Tommaso, C. Gentilini and G. Castellazzi [117]
- 2017 **Editor**, *Proceedings of the 5th International Conference on Mechanics of Masonry Structures Strengthened with Composite Materials (MuRiCo 2017)*, Bologna, Editore. ISBN-13: 978-3-0357-1164-6 Editors: A. Di Tommaso, C. Gentilini and G. Castellazzi [116]
- 2014 **Editor**, *Proceedings of the 4th International Conference on Mechanics of Masonry Structures Strengthened with Composite Materials (MuRiCo 2014)*, Ravenna, Editore. ISBN-13: 978-3-03835-203-7 Editors: A. Di Tommaso, C. Gentilini and G. Castellazzi [115]

Selected as reviewer for the following international journals

- Int. J. for Numerical Methods in Engr.
- Computational Mech.
- Comp. Meth. in App. Mech. and Engr.
- Composite Structures
- Finite Element in Analysis and Design
- Materials and Structures
- Meccanica
- Construction and Building Materials
- Comp. Meth. in Biomechanics and Biomedical Engr.
- Int. J. of Architectural Heritage
- Int. J. of Heat and Mass Transfer
- Mechanical Engr. Research
- Open J. of Discrete Mathematics
- Int. J. of Physical Sciences
- J. of Civil Engr. and Architecture
- J. of Composite Materials
- The Open Civil Engr. J.
- J. of Applied Sciences
- Cold Regions Science and Technology
- Science China Technological Sciences
- Remote Sensing
- The J. of Bridge Engr.
- Mech. of Adv. Materials and Structures
- Reports on Geodesy and Geoinformatics
- J. of Architectural Engr.
- Structures
- Earthquake Engr. and Engr. Vibration
- Heritage
- J. of Earthquake Engr.
- Int. J. of Geo-Information
- Int. J. of Physical Sciences
- J. Civil Engr. Časopis GRAĐEVINAR
- The Open Const. & Building Tech. J.
- J. of Basic and App. Research Int.
- Sensors
- Advances in Mechanical Engr.
- Advances in Civil Engr.
- J. of Cultural Heritage

Other activities

- 2020 **Conference lecture**, *IBMAC - 17th International Brick and Block Masonry Conference*, Bologna, 5-8 July Krakow Poland.
online
- 2019 **Conference lecture**, *DIGITAL&BIM - Implicazioni strutturali per la modellazione BIM di un edificio storico monumentale: il caso della Rocca di San Felice sul Panaro*, Bologna, 21-22 Novembre 2019.
- 2017 **Conference lecture**, *AIMETA2017 XXIII Conference - The Italian Association of Theoretical and Applied Mechanics*, Salerno, 4th - 7th September 2017.
- 2017 **Conference lecture**, *Florence Heri-Tech - On the generation of numerical models from point clouds for the analysis of damaged Cultural Heritage*, (Su invito della Prof.ssa Grazia Tucci), Salone dell'Arte e del Restauro di Firenze.
- 2016 **Conference lecture**, *ECCOMAS Congress 2016 VII European Congress on Computational Methods in Applied Sciences and Engineering M.Papadrakakis, V. Papadopoulos, G. Stefanou, V. Plevris (eds.)*, Crete Island, Greece, 5-10 June 2016.
- 2015 **Conference lecture**, *AIMETA2015, XXII Congresso - Associazione Italiana di Meccanica Teorica e Applicata*, Genova, 14-17 Settembre 2015.
- 2013 **Conference lecture**, *XXI Congresso - Associazione Italiana di Meccanica Teorica e Applicata*, Torino, 17-20 Settembre 2013.
- 2012 **Conference lecture**, *convegno internazionale SPIE2012 San Diego*, San Dieco CA, USA, 11-15 March 2012.
- 2012 **Conference lecture**, *convegno internazionale USCUDAR2012 3rd International Conference on Urban Sustainability, Cultural Sustainability, Green Development, Green Structures And Clean Cars*, Barcelona, Spain, October 17-19.
- 2011 **Conference lecture**, *XX Congresso - Associazione Italiana di Meccanica Teorica e Applicata*, Bologna, 12-15 Settembre 2011.
- 2010 **Conference lecture**, *XVIII Convegno del Gruppo Italiano di Meccanica Computazionale (GIMC)*, SIRACUSA, 22 - 24 Settembre 2010.
- 2010 **Conference lecture**, *XVIII Convegno Italiano di Meccanica Computazionale GIMC 2010*, University degli Studi di Catania, September 22-24.

- 2010 **Conference lecture**, *Second International Conference on the Effects of Noise on Aquatic Life*, Cork Ireland, August 15-20.
- 2010 **Conference lecture**, *IV European Conference on Computational Mechanics (ECCM2010)*, Palais des Congrès, Paris, France, May 16-21.
- 2009 **Conference lecture**, *10th US National Congress on Computational Mechanics (USNCCM-X)*, Columbus, Ohio, 16-19 July 2009.
- 2008 **Conference lecture**, *Convegno Internazionale VESUVIANA - Archeologia a confronto*, Bologna, 14-16 gennaio 2008.
- 2005 **Conference lecture**, *Giornata di Studio: "Rilievo, modellazione e restauro di murature antiche. Il caso dell'Insula del Centenario a Pompei*, Bologna, 16 Settembre 2005.
- 2004 **Conference lecture**, *III Congresso Nazionale AIAr*, 11-12 Febbraio 2004, Bressanone, Italy.

Skills

Languages

Italian **Mothertongue**
English **Advanced**
French **School level**

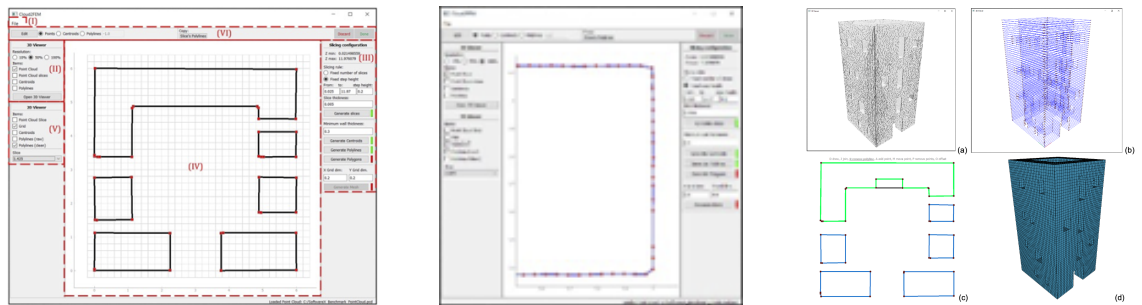
Computer technology

Basic FORTRAN, C++, Julia
Intermediate MS Office, OpenOffice, Linux, Microsoft Windows, MacOS X, Paraview, MeshLab
Advanced MATLAB, PYTHON, L^AT_EX, Computer Hardware
FE engines & Co. ANSYS, SIMULIA ABAQUS, DIANA, LUSAS, SAMCEF, ALTAIR HYPERMESH, STRAUS7, SAP2000, 3MURI, PROSAP, POR2000, COMSOL MULTIPHYSICS

Development of open-source computing codes

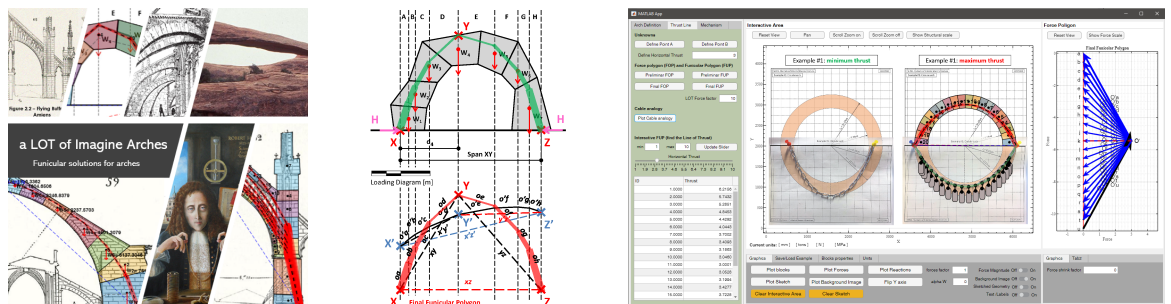
cloud2FEM A finite element mesh generator based on point clouds of existing/historical structures.

2018-today **Development of open-source computing codes - Cloud2FEM**, *Python App for the semi-automatic FEM generation from a cloud of points*, **Cloud2FEM** A finite element mesh generator based on point clouds of existing/historical structures. Illustration of the proposed GUI that implements the CLou2FEM method (from the paper "Cloud2FEM: A finite element mesh generator based on point clouds of existing/historical structures" by Giovanni Castellazzi, Nicolò Lo Presti, Antonio Maria D'Altri and, Stefano de Miranda (2022), published in [51])., <https://github.com/gcastellazzi/Cloud2FEM>.



aLOTof Imagine Arches aLOTofImagineArches is an educational software that allows for interactive demonstrations that involve the user in experimentation with the funicular solution concept. The tool is designed for the master students of the courses MHMS and HMWS and is mainly useful to capture the idea of ∞^3 funicular solutions for masonry arches.

2020-today **aLOTofImaginArches**, *Matlab App for the graphical analysis of masonry arches*, opensource Matlab code, <https://github.com/gcastellazzi/aLOTofImaginArches>.



FAESOR & FinEAL I was part of the **FAESOR** software developer group (*Matlab object-oriented Finite Element toolkit* - <http://hogwarts.ucsd.edu/~pkrysl/faesor/>) and **FinEAL** software (*Finite Element Analysis Learning Environment* - <http://hogwarts.ucsd.edu/~pkrysl/fineale>). The softwares, developed in the Matlab environment, allow finite element analysis of thermal, elastostatic and elastodynamic problems. Models for problems related to almost incompressible materials, plasticity, heat conduction in the nonlinear field are included. The software also allows the simulation of the dynamic behavior of structures immersed in fluids, buckling analysis to other calculation tools.

- 2008-2010 **SOFEA**, *Matlab object-oriented Finite Element toolkit*, opensource Matlab code, http://hogwarts.ucsd.edu/~pkrysl/sofea/sofea_publish.html.
- 2010-2012 **FAESOR**, *Matlab object-oriented Finite Element toolkit - Thermal and Stress Analysis with the Finite Element Method*, opensource Matlab code, http://hogwarts.ucsd.edu/~pkrysl/faesor/faesor_publish.html.
- 2012-2018 **FINEALE**, *Matlab object-oriented Finite Element toolkit - Thermal and Stress Analysis with the Finite Element Method*, opensource Matlab code, <https://github.com/PetrKryslUCSD/FinEALe/blob/master/fineale>.

Communication skills

- 2019 **Course**, *Academic Teaching Excellence - English as a Medium of Instruction*, British Council for the University of Bologna, 35-hour course.
- 2008 **Course**, *Effective Oral Presentation*, UC San diego Extension Course and Program.
- 2008 **Course**, *Grammar and Editing*, UC San diego Extension Course and Program.

Publications (full list)

Papers in international journals with peer-review

- [1] **Castellazzi, G.** and P. Krysl. "Displacement-based finite elements with nodal integration for Reissner-Mindlin plates". In: *International Journal for Numerical Methods in Engineering* 80.2 (2009), pp. 135–162. DOI: 10.1002/nme.2622.
- [2] **Castellazzi, G.**, S. de Miranda, and F. Ubertini. "Adaptivity based on the recovery by compatibility in patches". In: *Finite Elements in Analysis and Design* 46.5 (2010), pp. 379–390. DOI: 10.1016/j.finel.2009.12.004.
- [3] **Castellazzi, G.** "On the performances of parametric finite elements when geometry distortions occur". In: *Finite Elements in Analysis and Design* 47.12 (2011), pp. 1306–1314. DOI: 10.1016/j.finel.2011.07.004.
- [4] **Castellazzi, G.**, S. de Miranda, and F. Ubertini. "Patch based stress recovery for plate structures". In: *Computational Mechanics* 47.4 (2011), pp. 379–394. DOI: 10.1007/s00466-010-0548-3.
- [5] **Castellazzi, G.** "Analysis of second-order shear-deformable beams with semi-rigid connections". In: *Journal of Constructional Steel Research* 79 (2012), pp. 183–194. DOI: 10.1016/j.jcsr.2012.07.024.
- [6] **Castellazzi, G.** and P. Krysl. "A nine-node displacement-based finite element for Reissner-Mindlin plates based on an improved formulation of the NIPE approach". In: *Finite Elements in Analysis and Design* 58 (2012), pp. 31–43. DOI: 10.1016/j.finel.2012.04.004.
- [7] **Castellazzi, G.** and P. Krysl. "Patch-averaged assumed strain finite elements for stress analysis". In: *International Journal for Numerical Methods in Engineering* 90.13 (2012), pp. 1618–1635. DOI: 10.1002/nme.4264.
- [8] **Castellazzi, G.**, P. Krysl, L. Rojas, and T.W. Cranford. "Assessment of the effect of natural and anthropogenic aquatic noise on vaquita (*Phocoena sinus*) through a numerical simulation." In: *Advances in experimental medicine and biology* 730 (2012), pp. 307–309. DOI: 10.1007/978-1-4419-7311-5_68.
- [9] **Castellazzi, G.**, S. de Miranda, and C. Mazzotti. "Finite element modelling tuned on experimental testing for the structural health assessment of an ancient masonry arch bridge". In: *Mathematical Problems in Engineering* 2012 (2012). DOI: 10.1155/2012/495019.
- [10] **Castellazzi, G.**, C. Colla, S. de Miranda, G. Formica, E. Gabrielli, L. Molari, and F. Ubertini. "A coupled multiphase model for hygrothermal analysis of masonry structures and prediction of stress induced by salt crystallization". In: *Construction and Building Materials* 41 (2013), pp. 717–731. DOI: 10.1016/j.conbuildmat.2012.12.045.
- [11] **Castellazzi, G.**, C. Gentilini, P. Krysl, and I. Elishakoff. "Static analysis of functionally graded plates using a nodal integrated finite element approach". In: *Composite Structures* 103 (2013), pp. 197–200. DOI: 10.1016/j.compstruct.2013.04.013.
- [12] **Castellazzi, G.**, C. Gentilini, and L. Nobile. "Seismic vulnerability assessment of a historical church: Limit analysis and nonlinear finite element analysis". In: *Advances in Civil Engineering* 2013 (2013). DOI: 10.1155/2013/517454.
- [13] **Castellazzi, G.**, P. Krysl, and I. Bartoli. "A displacement-based finite element formulation for the analysis of laminated composite plates". In: *Composite Structures* 95 (2013), pp. 518–527. DOI: 10.1016/j.compstruct.2012.08.029.
- [14] E. Artioli, **Castellazzi, G.**, and P. Krysl. "Assumed strain nodally integrated hexahedral finite element formulation for elastoplastic applications". In: *International Journal for Numerical Methods in Engineering* 99.11 (2014), pp. 844–866. DOI: 10.1002/nme.4723.
- [15] D. Ciancio, I. Carol, and **Castellazzi, G.** "Optimal penalty stiffness values of concurrent 2D elastic interface elements leading to accurate stress tractions". In: *International Journal for Numerical Methods in Engineering* 98.5 (2014), pp. 344–370. DOI: 10.1002/nme.4633.
- [16] D. Ciancio and **Castellazzi, G.** "Fictitious elastic stiffness parameters of zero-thickness finite elements at bi-material interfaces". In: *Applied Mechanics and Materials* 553 (2014), pp. 16–21. DOI: 10.4028/www.scientific.net/AMM.553.16.
- [17] M. Mazzotti, I. Bartoli, **Castellazzi, G.**, and A. Marzani. "Computation of leaky guided waves dispersion spectrum using vibroacoustic analyses and the Matrix Pencil Method: A validation study for immersed rectangular waveguides". In: *Ultrasonics* 54.7 (2014), pp. 1895–1898. DOI: 10.1016/j.ultras.2014.05.009.
- [18] A. Custodi, **Castellazzi, G.**, S. de Miranda, and F. Ubertini. "Structural analysis of historic masonry and technical guideline application: The case of the Insula del Centenario [IX, 8] in Pompeii". In: *Key Engineering Materials* 624 (2015), pp. 114–122. DOI: 10.4028/www.scientific.net/KEM.624.114.
- [19] **Castellazzi, G.**, E. Artioli, and P. Krysl. "Linear tetrahedral element for problems of plastic deformation". In: *Meccanica* 50.12 (2015), pp. 3069–3086. DOI: 10.1007/s11012-015-0185-1.
- [20] **Castellazzi, G.**, D. Ciancio, and F. Ubertini. "A simplified micro-modeling approach for Historical Stone Masonry Walls". In: *Key Engineering Materials* 624 (2015), pp. 74–79. DOI: 10.4028/www.scientific.net/KEM.624.74.

- [21] **Castellazzi, G.**, A.M. D'Altri, G. Bitelli, I. Selvaggi, and A. Lambertini. "From laser scanning to finite element analysis of complex buildings by using a semi-automatic procedure". In: *Sensors (Switzerland)* 15.8 (2015), pp. 18360–18380. DOI: 10.3390/s150818360.
- [22] **Castellazzi, G.**, C. Gentilini, S. Casacci, A. Di Tommaso, and M.J. Monaldi. "An enhanced finite element for Sequentially Linear Analysis problems". In: *Key Engineering Materials* 624 (2015), pp. 43–50. DOI: 10.4028/www.scientific.net/KEM.624.43.
- [23] **Castellazzi, G.**, S. de Miranda, G. Formica, L. Molari, and F. Ubertini. "Coupled hygro-mechanical multiscale analysis of masonry walls". In: *Engineering Structures* 84 (2015), pp. 266–278. DOI: 10.1016/j.engstruct.2014.11.034.
- [24] **Castellazzi, G.**, S. de Miranda, L. Grementieri, L. Molari, and F. Ubertini. "Modelling of non-isothermal salt transport and crystallization in historic masonry". In: *Key Engineering Materials* 624 (2015), pp. 222–229. DOI: 10.4028/www.scientific.net/KEM.624.222.
- [25] **Castellazzi, G.**, S. de Miranda, L. Grementieri, L. Molari, and F. Ubertini. "Multiphase model for hygrothermal analysis of porous media with salt crystallization and hydration". In: *Materials and Structures/Materiaux et Constructions* 49.3 (2016), pp. 1039–1063. DOI: 10.1617/s11527-015-0557-y.
- [26] A.M. D'Altri, **Castellazzi, G.**, S. de Miranda, and A. Tralli. "Seismic-induced damage in historical masonry vaults: A case-study in the 2012 Emilia earthquake-stricken area". In: *Journal of Building Engineering* 13 (2017), pp. 224–243. DOI: 10.1016/j.jobe.2017.08.005.
- [27] L. Grementieri, F. Daghia, L. Molari, **Castellazzi, G.**, H. Derluyn, V. Cnudde, and S. de Miranda. "A multi-scale approach for the analysis of the mechanical effects of salt crystallisation in porous media". In: *International Journal of Solids and Structures* 126-127 (2017), pp. 225–239. DOI: 10.1016/j.ijsolstr.2017.08.009.
- [28] M. Maragna, C. Gentilini, **Castellazzi, G.**, and C. Carloni. "Bond of steel bars to masonry mortar joints: Test results and analytical modelling". In: *Key Engineering Materials* 747 KEM (2017), pp. 319–325. DOI: 10.4028/www.scientific.net/KEM.747.319.
- [29] **Castellazzi, G.**, A.M. D'Altri, S. de Miranda, and F. Ubertini. "An innovative numerical modeling strategy for the structural analysis of historical monumental buildings". In: *Engineering Structures* 132 (2017), pp. 229–248. DOI: 10.1016/j.engstruct.2016.11.032.
- [30] E. Bassoli, L. Vincenzi, A.M. D'Altri, S. de Miranda, M. Forghieri, and **Castellazzi, G.** "Ambient vibration-based finite element model updating of an earthquake-damaged masonry tower". In: *Structural Control and Health Monitoring* 25.5 (2018). DOI: 10.1002/stc.2150.
- [31] G. Bitelli, **Castellazzi, G.**, A.M. D'altri, S. de Miranda, A. Lambertini, and I. Selvaggi. "On the generation of numerical models from point clouds for the analysis of damaged Cultural Heritage". In: *Materials Science and Engineering* 364 (2018), p. 012083. DOI: 10.1088/1757-899X/364/1/012083.
- [32] A.M. D'Altri, C. Carloni, S. de Miranda, and **Castellazzi, G.** "Numerical modeling of FRP strips bonded to a masonry substrate". In: *Composite Structures* 200 (2018), pp. 420–433. ISSN: 0263-8223. DOI: <https://doi.org/10.1016/j.compstruct.2018.05.119>.
- [33] A.M. D'Altri, G. Milani, S. de Miranda, **Castellazzi, G.**, and V. Sarhosis. "Stability analysis of leaning historic masonry structures". In: *Automation in Construction* 92 (2018), pp. 199–213. DOI: 10.1016/j.autcon.2018.04.003.
- [34] A.M. D'Altri, S. de Miranda, **Castellazzi, G.**, and V. Sarhosis. "A 3D detailed micro-model for the in-plane and out-of-plane numerical analysis of masonry panels". In: *Computers and Structures* 206 (2018), pp. 18–30. DOI: 10.1016/j.compstruc.2018.06.007.
- [35] A.M. D'Altri, **Castellazzi, G.**, and S. de Miranda. "Collapse investigation of the Arquata del Tronto medieval fortress after the 2016 Central Italy seismic sequence". In: *Journal of Building Engineering* 18 (2018), pp. 245–251. DOI: 10.1016/j.jobe.2018.03.021.
- [36] **Castellazzi, G.**, A.M. D'Altri, S. de Miranda, A. Chiozzi, and A. Tralli. "Numerical insights on the seismic behavior of a nonisolated historical masonry tower". In: *Bulletin of Earthquake Engineering* 16.2 (2018), pp. 933–961. DOI: 10.1007/s10518-017-0231-6.
- [37] A.M. D'Altri, F. Messali, J. Rots, **Castellazzi, G.**, and S. de Miranda. "A damaging block-based model for the analysis of the cyclic behaviour of full-scale masonry structures". In: *Engineering Fracture Mechanics* 209 (2019), pp. 423–448. DOI: 10.1016/j.engfracmech.2018.11.046.
- [38] A.M. D'Altri, G. Milani, S. de Miranda, **Castellazzi, G.**, and V. Sarhosis. "On the Stability Analysis of a Geometrically Complex Leaning Historic Structure". In: *RILEM Bookseries* 18 (2019), pp. 975–982. DOI: 10.1007/978-3-319-99441-3_105.
- [39] S. Degli Abbatì, A.M. D'Altri, D. Ottonelli, **Castellazzi, G.**, S. Cattari, S. de Miranda, and S. Lagomarsino. "Seismic assessment of interacting structural units in complex historic masonry constructions by nonlinear static analyses". In: *Computers and Structures* 213 (2019), pp. 51–71. DOI: 10.1016/j.compstruc.2018.12.001.

- [40] S. de Miranda, A.M. D'Altri, and **Castellazzi, G.** "Modeling environmental ageing in masonry strengthened with composites". In: *Engineering Structures* 201 (2019). DOI: 10.1016/j.engstruct.2019.109773.
- [41] S. Barattucci, V. Sarhosis, A.W. Bruno, A.M. D'Altri, S. de Miranda, and **Castellazzi, G.** "An experimental and numerical study on masonry triplets subjected to monotonic and cyclic shear loadings". In: *Construction and Building Materials* 254 (2020). DOI: 10.1016/j.conbuildmat.2020.119313.
- [42] A.M. D'Altri, S. De Miranda, **Castellazzi, G.**, V. Sarhosis, J. Hudson, and D. Theodossopoulos. "Historic Barrel Vaults Undergoing Differential Settlements". In: *International Journal of Architectural Heritage* 14.8 (2020), pp. 1196–1209. DOI: 10.1080/15583058.2019.1596332.
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