

Curriculum Vitae

GIOVANNI FORMICA

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Roma, November 11, 2022

Full Professor in Solid Mechanics
PhD in Computational Mechanics
Structural Engineer
born on Sep 6, 1975,
in Policoro (MT), Italy

Areas of Research:	Finite Element Methods, Numerical Strategies, Masonry mechanics, CNT-nanocomposite dynamics, Structural stability, Damage & Fracture Mechancis, Thermo-fluid dynamics
Relevant Informatics Skills:	C/C++ Developer (WinXP, MacOSX, Linux OS), deal.ii C++ software library, FEniCS C++/Python computing platform, Elmer (Scientific Computing Ltd., Finland), MSC-Nastran, SAP, ABAQUS, Maple, Mathematica, MATLAB developer
Languages:	English (working knowledge) French (working knowledge)

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EDUCATION

- 2005 Mar **PhD** in “Computational Mechanics” (XVI ciclo), Calabria University, Italy. Thesis title “Multi-level analysis of brick masonry walls”. Advisor: Prof. Raffaele Casciaro
- 2000 Oct **M.Sc.** in Structural Engineering), Engineering School at Calabria University. Thesis title “Nonlinear Analysis of brick masonry walls exhibiting damage and friction responses”. Advisor: Prof. Raffaele Casciaro
- 1994 Jul **Maturity Diploma** in Humanities Subject, “Quinto Orazio Flacco” High School, Potenza.

PROFESSIONAL HISTORY

- 2022–present **Full Professor** in Solid Mechanics, Department of Architecture, Roma Tre University, Italy.
- 2015–2021 **Associate Professor** in Solid Mechanics, Department of Architecture, Roma Tre University, Italy.
- 2005–2014 **Assistant Professor** in Solid Mechanics, School of Architecture, Roma Tre University, Italy.
- 2005 **post-doc fellowship**, Institute of Mathematics, Helsinki University of Technology, Finland.
- 2017–present **PhD teaching staff member** “Architecture: Innovation and Heritage” PhD program, Roma Tre University.
- 2014–2016 **PhD teaching staff member** “Sciences and Technologies in Physics, Chemistry and Materials” PhD program, Calabria University.
- 2007–2013 **PhD teaching staff member** “Hard Science – Bernardino Telesio” PhD program, Calabria University.
- 2006–2007 **PhD teaching staff member** “Computational Mechanics” PhD program, Calabria University.
- 2010 **visiting professor fellowship**, Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign (USA).

TEACHING EXPERIENCE

- 2006–present **lecturer** of *Fundamentals of Structural Mechanics* (in Italian), undergraduate course, Dept. of Architecture, Roma Tre University, 8 ECTS.
- 2022–present **lecturer** of *CAD/CAE – Fundamentals of Computational Structural Mechanics* (in Italian), undergraduate & upper-level undergraduate course, Dept. of Architecture, Roma Tre University, 4 ECTS.
- 2015–present **teaching staff member** of the Thesis Lab “Lo spazio dell’abitare” (in Italian), upper-level undergraduate course, Dept. of Architecture, Roma Tre University, 4 ECTS.
- 2010–2020 **lecturer** of *Computer-Aided Design for Structural Mechanics* (in Italian), upper-level undergraduate course, Dept. of Architecture, Roma Tre University, 4 ECTS.
- 2010–2013 **lecturer** of *Computational Mechanics*, International Master Course in Civil Engineering, Dual Degree Program (Laurea Magistrale & U.S. Master of Science), Columbia University & Roma Tre University, 4 ECTS.
- 2007–2011 **lecturer** of *Solid Mechanics* within the multidisciplinary lab “Struttura della Città”, upper-level undergraduate course, Faculty of Architecture, Roma Tre University, 4 ECTS.

- 2001–2005 **teaching assistant** of several courses in *Solid Mechanics* and *Theory of Structures* for Civil Engineering School at Calabria University.
- 2002 **collaboration** with the Faculty of Engineering at Calabria University in support of the project for high quality teaching “*e-Sdc*” for the new Italian degree courses in Engineering. Co-author of the corresponding lecture notes.

advisor & co-advisor Bachelor and Master of Science Degree theses (about 100 in the last 5 years).

Some relevant thesis at Dept. of Architecture:

- “Copertura per l’area archeologica di Monteleone Sabino”, Fava S, 2014;
- “Linking Rome. Progetto di un ponte sospeso pedonale”, Donato G, 2014;
- “Stadio Flaminio: riqualificazione tra innovazione e tradizione”, Clarizio A, 2015;
- “Restauro del legno strutturale nel patrimonio dei beni culturali”, Fei L, 2016, in collaboration with Prof. Pugliano;
- “Heidelberg Wissen | schaft | Stadt. Un ponte come spazio di incontro tra le scienze”, Micara V, 2018, in collaboration with Prof. Franciosini (Zordan Award);
- “Superfici complesse in architettura: progettazione e fabbricazione”, Sircana P, Valentini A, 2020, in collaboration with Prof. Raimondi;
- “Form-finding generativo in architettura: un caso studio all’Ex-Mercato di Bestiame di Testaccio”, Ricolli G, 2020, in collaboration with Prof. Beccu.

Some relevant thesis at other Depts and Universities:

- “Animazione di un ponte sospeso soggetto ad un carico areodinamico”, Caravani V, 2016 (M.Sc. in Informatics Engineering, Roma Tre University);
- “Studio di materiali e dispositivi innovativi per la dissipazione meccanica in infrastrutture”, Donato G, 2017 (M.Sc. in Civil Engineering, Roma Tre University);
- “Modellazione e simulazione della dinamica non lineare di ponti sospesi mediante l’utilizzo di VPL (Visual Programming Language)”, Murer M, 2017 (M.Sc. in Civil Engineering, Roma Tre University);
- “Studio Parametrico delle Vibrazioni nei Sistemi Non Lineari”, Iorio F, 2018, in collaboration with Prof. Milicchio (M.Sc. in Informatics Engineering, Roma Tre University);
- “Metodi numerici di integrazione nel tempo di sistemi dinamici”, Pelliccia G, 2019 (M.Sc. in Civil Engineering, Roma Tre University);
- “Modellazione Micro-Macro Strutturale di Materiali Compositi con Nanotubi di Carbonio”, Alessi R, 2009, in collaboration with Prof. Lacarbonara (M.Sc. in Civil Engineering, Sapienza University of Rome);
- “Modeling the interfacial friction damping of carbon nanotube-based composites for vibrational energy dissipation”, Talò M, 2012, in collaboration with Prof. Lacarbonara (M.Sc. in Civil Engineering, Sapienza University of Rome);
- “Debonding modeling of Carbon Nanotubes-Based Supercapacitors”, Ciminelli AD, 2012, in collaboration with Prof. Lacarbonara (M.Sc. in Aerospace Engineering, Sapienza University of Rome);
- “Preliminary assessment of an outdoor test cell design”, Ferroni S, 2020, in collaborazione con Prof. Causano (M.Sc. in Building Engineering, Politecnico di Milano).

advisor & co-advisor PhD theses:

- “La carpenteria lignea della tradizione costruttiva di ambiente romano. Conoscenza, definizione, attualizzazione della *regola dell’arte*”, Fei L, 2021, in collaboration with Prof. Pugliano (*Architettura: innovazione e patrimoni* PhD at Roma Tre University);
- “Computational Fluid Dynamics simulations of Laser Metal Deposition process exploring open source software”, Murer M, 2020, in collaboration with Prof. Auricchio (*Design, Modeling and Simulation in Engineering* PhD at Pavia University).

RESEARCH EXPERIENCE

CNT-NANOCOMPOSITE MECHANICS

- 2017-2020 **Co-Investigator** of the Italian Ministry Research Project *PRIN 2015* “Advanced mechanical modeling of new materials and structures for the solution of 2020 Horizon challenges”, PI: Prof. Di Paola (University of Palermo), Grant 2015JW9NJT_016.
- 2017-2019 **Co-Investigator** of the research project *AFOSR* “Highly reconfigurable, multistable composites with tunable global/local morphing capability” funded by *Air Force Office of Scientific Research, USA* (AFOSR Grant 12141951), PI: Prof. Lacarbonara (Sapienza University of Rome).
- 2018 **Co-Investigator** of the research project “MORPHOSIS - Morphing Locally and Globally Structures with Multiscale Intelligence by Mimicking Nature”, ERC-Starting Grant 2012 (EC project ID: 308261), PI: Prof. Lanzara (Roma Tre University).
- 2014-2017 **Co-Investigator** of the research project *AFOSR* “Bridging High Strength and Dissipation in Carbon Nanotube Composites” funded by *Air Force Office of Scientific Research, USA* (AFOSR Grant FA9550-14-1-0082), PI: Prof. Lacarbonara (Sapienza University of Rome).
- 2011-2012 **Co-Investigator** of the research project “Fuel cell-supercapacitor hybrid system for unmanned devices”, *Defense Fundamental and Specialized International Collaborative Grant*, funded by the Agency for Defense Development in South-Korea, PI: Prof. Lanzara (Roma Tre University).
- 2010-2011 **PI** of the research project “Investigations on the fatigue-life behaviour of carbon-nanotube supercapacitors”, funded by the Institute of Advanced Technologies (Trapani).

selected research results:

- “SiNDy”, FEM software code developed in C++ and integrated with DOLFIN/FEniCS libraries, for dynamic analysis characterizing dissipation properties of 3D-modeled CNT-nanocomposites (freely available on [Zenodo](#));
- 3D continuum model for CNT-nanocomposites with an incremental constitutive law for capturing the stick-slip phenomenon at the CNT hosting-matrix interface;
- nonlinear beam model for CNT-nanocomposites, derived by the 3D continuum and identified by dynamic experimentations;
- efficient optimization algorithm based on meta-heuristic Differential Evolution methods for CNT-nanocomposite dynamic design;

MASONRY MECHANICS

- 2010-2014 **Co-Investigator** of the European research project *3ENCULT* “Efficient Energy for EU Cultural Heritage”, “7th Framework Programme - Cooperation”, Project Ref.: 260162, PI: Dr. Troi (EURAC research, Italy).
- 2008-2010 **Co-Investigator** of the European research project *SMooHS* “Smart Monitoring of Historic Structures”, “7th Framework Programme - ENVIRONMENT”, Project Ref.: 212939, PI: Dr. Krüger (University of Stuttgart, Germany).
- 2008-2010 **Co-Investigator** of the Italian Ministry Research Project *PRIN 2007* “Models and numerical strategies for performance based design of nonlinear structures”, PI: Prof. Casciaro (Calabria University).
- 2006-2007 **Co-PI** of the research project “Investigation on the mechanical behaviour of new buildings made of Trani stones”, research contract between Roma Tre University and Manzi Marmi Company (Trani, Italy), PI: Prof. Salerno, Roma Tre University.
- Co-Investigator** of the Italian Ministry Research Project *PRIN 2003* “Integrated methods of safety assessment analysis of masonry buildings”, PI: Prof. Casciaro (Calabria University).
- PI** of the Young Investigator project “Nonlinear analysis of masonry walls”, funded by Calabria University.

2003-2004 **Co-Investigator** of the Italian Ministry Research Project *PRIN 2003* "Non-destructive methods for identification and diagnosis of materials and structures", PI Prof. Morassi (University of Udine).

Co-Investigator of the Italian Ministry Research Project *PRIN 2003* "Structural safety of historical masonry buildings and intervention strategies", PI: prof. Mezzina (University of Bari).

2001-2002 **Collaborator** of the research project *POP 94/99 (MECOM)* - Regione Calabria, "Computational mechanics developments in structural design processes for both civil and industrial engineering applications", PI: Prof. Casciaro (Calabria University).

2000-2001 **Collaborator** of the Italian Ministry Research Project *Cofin 1998* "Development of integrated strategies for masonry building design and analysis", PI: Prof. Casciaro (Calabria University).

selected research results:

- "MUMAc", user-friendly software code developed in C++ for Win OS for the nonlinear analysis of masonry walls subject to coupled effects of mechanical and environmental damage processes;
- "FEMA3D", user-friendly software codes developed in C++ for Win OS for the nonlinear analysis of masonry buildings, integrated tool for [POR 2000](#), in collaboration with Dr. Brasile (Bentley Systems Inc., USA);
- "FEMale", user-friendly software codes developed in C++ for Win OS for the local and out-of-plane nonlinear analysis of masonry walls, as toolkit for design purposes, in collaboration with Dr. Brasile (Bentley Systems Inc., USA); software released to Manzi Marmi Company;
- "MUMA", codice user-friendly scritto in C++ per piattaforme Windows per l'analisi non lineare (danno e attrito) in piano di pareti murarie, in collaborazione con l'Ing. Brasile (Bentley Systems Inc., USA);
- "DAMA", software code developed in C++ for the in-plane nonlinear analysis per l'analisi di masonry walls.

STRUCTURAL INSTABILITY

2013-2016 **Co-Investigator** of the Italian Ministry Research Project *PRIN 2010-2011* "Models and algorithms for the nonlinear analysis of structures and their validation through performance-based design rules", PI: Prof. Casciaro (Calabria University), Grant 2010NRBMTP_002.

2010-2015 **Collaborator** of the research project "Ultrafast and Robust, Resettable Threshold Sensors Based on Discontinuity-Induced Nonlinearities", National Science Foundation Grant #: 0855787, PI Prof. Dankowicz.

selected research results:

- MATLAB code integrated with COMSOL Multiphysics and COCO development platform for parametric continuation and bifurcation analysis of nonlinear beam elements, in collaboration with Prof. Dankowicz (UIUC, Illinois) and Prof. Arena (Sapienza University of Rome);
- user-friendly software code developed in C++ for mechanisms analysis in truss structures, and based on perturbation methods;
- open-source software code developed in C++ for pseudo-arc-length pathfollowing analysis of nonlinear dynamic systems, freely available on [Zenodo](#), in collaboration with Dr. Milicchio (Roma Tre University).

THERMO-FLUID DYNAMICS

da 2019 **Co-Investigator** of the Italian Ministry Research Project *PRIN 2017* "3D PRINTING: A BRIDGE TO THE FUTURE. Computational methods, innovative applications, experimental validations of new materials and technologies", PI: Prof. Auricchio (University of Pavia), Grant 2017L7X3CS_002.

selected research results:

FEM software code developed in C++ and integrated with `deal.ii` libraries for thermo-fluid dynamic analysis of 3D-printing LMD process, freely available on [Zenodo](#), in collaboration with Dr. Milicchio (Roma Tre University) and Dr. Murer (University of Pavia).

FRACTURE MECHANICS

2005 **Co-Investigator** of the research project European Network “SMART Systems, New Materials, Adaptive Systems and their Nonlinearities. Modeling and Computation”, PI: Prof. Miara, ESIEE, Paris (France), Project Ref.: HPRN-CT-2002-00284.

2004 **Co-Investigator** of the research project “A thermomechanics based fracture assessment method for structural components”, funded byll’*Academy of Finland*, PI: Prof. Tuhkuri (Helsinki University of Technology)

selected research results:

- FEM software code developed in C++ and integrated with DOLFIN/FEniCS libraries for determining crack growth paths and structural carrying capacity of 2D linear elastic continua, in collaboration with Dr. Milicchio (Roma Tre University);
- FEM software code developed in C++ and integrated with ELMER (CSC software) for crack growth simulations in 2D linear elastic continua, in collaboration with Dr. Lyly (ABB Oy, Helsinki, Finland).

EDITORIAL SERVICE

2021–present **Guest Editor** for the Special Issue “Computational Modeling and Simulation for Nanomaterials, Nanotechnology, and Nanoscience II”, *Nanomaterials* (Impact Factor: 5.719)

2019–2020 **Guest Editor** for the Special Issue “Computational Modeling and Simulation for Nanomaterials, Nanotechnology, and Nanoscience I”, *Nanomaterials* (Impact Factor: 4.324)

2022–present **Scientific and Organizing Committee member** of the “Third International Nonlinear Dynamic Conference” (NODYCON 2023), Rome (Italy), Jun 2023.

2020–2021 **Scientific and Organizing Committee member** of the “Third International Nonlinear Dynamic Conference” (NODYCON 2021), Rome (Italy), Feb 2021.

2018–2019 **Scientific and Organizing Committee member** of the “Third International Nonlinear Dynamic Conference” (NODYCON 2019), Rome (Italy), Feb 2019.

2018 **Scientific Committee member** of the IASS Annual Symposium 2018 “Creativity in Structural Design”, MIT, Boston (USA), Jul 2018.

2018 **Scientific and Organizing Committee member** of the Mini-Symposium “Mechanics of Nanocomposites”, 9th International Conference on Computational Methods (ICCM), Rome (Italy), Aug 2018.

2017 **Scientific and Organizing Committee member** of the Symposium “Mechanics of Slender Structures” (MOSS 2017), Mérida (Spain), Dec 2017.

2005 regular **Reviewer** for several international journals, including “Nonlinear Dynamics” (Springer), “Journal of Sound and Vibration”, “Computer Methods in Applied Mechanics and Engineering”, “Computers and Structures”, “Engineering Fracture Mechanics”, “Computational Material Sciences” (Elsevier); “Earthquake Engineering and Structural Dynamics” (Wiley); “Journal of Mechanics of Materials and Structures” (Mathematical Sciences Pubs). In particular:

- “Elsevier Reviewer Recognition”, *Polymer Testing*, Oct 2018.
- “Elsevier Reviewer Recognition”, *Composite Structures*, Feb 2018.
- “Elsevier Reviewer Recognition”, *European Journal of Mechanics / A Solids*, Feb 2015.

ACADEMIC SERVICE

- 2019–present **College Teaching Committee member** for the Department of Architecture (Roma Tre University), elective office;
- 2018–present **Disciplinary Committee member** for Roma Tre University.
- 2006 **Co-Founder and Development-Planner** of the Modeling and Simulation Lab, Structural Engineering Dept., Roma Tre University.

INVITED CONFERENCE TALKS & KEYNOTE LECTURES

1. "Modellazione computazionale delle strutture nell'era digitale: tra la discretizzazione geometrico-fisica e l'integrazione algoritmico informatica", PhD in 'Architettura: innovazione e patrimonio', Rome, Dec 2021.
2. "Edifici, ponti, strutture: dinamiche in equilibrio di ieri e di oggi. Perché la scienza del costruire ci riguarda tutti", Liceo Righi, Rome, Feb 2019.
3. "Modeling and simulation of mechanical damping in nanocomposites", Key-note lecture, 'Mechanics of Nanocomposites' Mini-Symposium, 9th International Conference on Computational Methods (ICCM), Rome, Aug 2018.
4. "Modeling laminated plates", Key-note lecture, 2nd International Conference Modern Problem in Applied Mathematics, Tbilisi (Georgia), Sep 2013.
5. "Computational masonry mechanics", DICAM, Università di Bologna (Italy), Apr 2012.
6. "Some nonstandard numerical strategies", Dynamics Interest Seminar, Dept. of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign (USA), Nov 2010.
7. "Coupled mechanical-environmental deterioration of masonry walls", GA-Meeting, SMooHS European Collaborative Project, Wien (Austria), Apr 2010.
8. "Modellazione e simulazione multiscala di pareti murarie" (Multiscale modeling and simulation of masonry walls), DICA, University of Perugia, Perugia (Italy), Feb 2010.
9. "Analisi non lineare di pannelli murari", DISTART, Università di Bologna (Italy), Apr 2008.
10. "Modelling brick masonry walls", Symposium on Mathematical Modeling, Mechanics and Materials, Bressanone (BZ), Mar 2007.
11. "Modelling damage in brickwork joints", European Conference on Smart Systems, IAC-CNR, Roma (Italy), Oct 2006.
12. "Una strategia multilivello per l'analisi non lineare di pannelli in muratura", Dipartimento di Strutture, Università degli Studi Roma Tre, Roma (Italy), Nov 2005.
13. "Analisi numerica di propagazione della fessura con l'approccio ϑ -method", IAC-CNR, Roma (Italy), Sep 2005.
14. "A multilevel strategy for analysis of masonry structures: non-standard path-following methods and FE formulations", Institute of Mathematics, Helsinki University of Technology (Finland), May 2005.
15. "Caratterizzazione del comportamento di edifici in muratura", ciclo di lezioni all'interno del Master "SISMA - Analisi, progettazione e controllo di strutture antisismiche", Università della Calabria, Rende (Italy), Sep 2004.
16. "Indagine numerica per la stima di inclusioni in un continuo elastico", Università degli Studi di Udine, Udine (Italy), Nov 2003.

PUBLISHED SOFTWARE CODES

- 2022 "A C++ pseudo-arclength pathfollowing scheme for generally nondifferentiable multi-dof dynamic systems". DOI: 10.5281/zenodo.6616482.
Language: C++, Ref. Pub.: [3] <https://zenodo.org/record/6616482>
- 2021 "A coupled multiphase Lagrangian–Eulerian fluid–dynamics framework for numerical simulation of Laser Metal Deposition process". DOI: 10.5281/zenodo.5888175.
Language: C++ using deal.ii library, Ref. Pubs.: [5, 8] <https://zenodo.org/record/5888175>
- 2019 "sindy" (nonlinear dynamic simulations of carbon–nanotube nanocomposites, specifically addressed to optimize damping properties). DOI: 10.5281/zenodo.2784436.
Language: C++ using DOLFIN/FEniCS libraries, Ref. Pubs.: [17, 16, 13, 11]
<https://zenodo.org/record/2784436>

PUBLICATIONS

JOURNAL PAPERS (41)

- [1] Murer M, [Formica G](#), Milicchio F, Morganti S, Auricchio F. 2022. "An efficient and accurate numerical method for advection–diffusion coupled problems". *Journal of Computational Physics*, **submitted for publication**.
- [2] [Formica G](#), Lacarbonara W, Cetraro M, Yabuno H. 2022. "Nonlinear dynamic response of nanocomposite microbeams array for multiple mass sensing". *International Journal of Mechanical Sciences*, **accepted pending revision**.
- [3] [Formica G](#), Milicchio F, Lacarbonara W. 2022. "A Krylov accelerated Newton–Raphson scheme for efficient pseudo–arclength pathfollowing". *International Journal of Non-Linear Mechanics*, **145**: 104116
- [4] Pau A, Carboni B, Lacarbonara W, [Formica G](#). 2022. "Propagation of nonlinear bending waves in hysteretic beams". *International Journal for Multiscale Computational Engineering*, **20** (6): 43–50.
- [5] Murer M, [Formica G](#), Milicchio F, Morganti S, Auricchio F. 2022. "A coupled multiphase Lagrangian–Eulerian fluid–dynamics framework for numerical simulation of Laser Metal Deposition process". *International Journal of Advanced Manufacturing Technology*, **120** (5–6): 3269–3286.
- [6] Gumina S, Candela V, Cacciarelli A, Iannuzzi E, [Formica G](#), Lacarbonara W. 2021. "Three-part humeral head fractures treated with a definite construct of blocked threaded wires: finite element and parametric optimization analysis". *JSES International*, **5** (6): 983–991.
- [7] [Formica G](#), Vaiana N, Rosati L, Lacarbonara W. 2021. "Pathfollowing of high–dimensional hysteretic systems under periodic forcing" *Nonlinear Dynamics*, **103** (4): 3515–3528.
- [8] Murer M, Furlan V, [Formica G](#), Morganti S, Previtali B, Auricchio F. 2021. "Numerical simulation of particles flow in Laser Metal Deposition technology comparing Eulerian–Eulerian and Lagrangian–Eulerian approaches". *Journal of Manufacturing Processes*, **68**: 186–197.
- [9] Leonetti L, Garcea G, Magisano D, Liguori F, [Formica G](#), Lacarbonara W. 2020. "Optimal Design of CNT–Nanocomposite Nonlinear Shells". *Nanomaterials*, **10** (12), 2484: 1–24.
- [10] Quaranta G, [Formica G](#), Machado JT, Lacarbonara W, Masri SF. 2020. "Understanding COVID–19 nonlinear multi–scale dynamic spreading in Italy". *Nonlinear Dynamics*, **101** (3): 1583–1619.
- [11] [Formica G](#), Milicchio F, Lacarbonara W. 2020. "Storage and damping optimization in hysteretic multilayer nanocomposites". *International Journal for Multiscale Computational Engineering*, **18** (2): 141–157.
- [12] [Formica G](#), Milicchio F. 2020. "Kinship–based differential evolution algorithm for unconstrained numerical optimization". *Nonlinear Dynamics*, **99** (2): 1341–1361.
- [13] [Formica G](#), Lacarbonara W. 2020. "Asymptotic dynamic modeling and response of hysteretic nanostructured beams". *Nonlinear Dynamics*, **99** (1): 227–248.

- [14] [Formica G](#), Milicchio F, Murer M. 2019. "An Integrated CAD Strategy for Nonlinear Dynamics of 3D Suspended Bridges". *Computer-Aided Design and Applications*, **16** (6): 1046–1062.
- [15] [Formica G](#), Talò MM, Lanzara G, Lacarbonara W. 2019. "Parametric Identification of Carbon Nanotube Nanocomposites Constitutive Response" *Journal of Applied Mechanics, Transactions ASME*, **86** (4): 041007.
- [16] [Formica G](#), Milicchio F, Lacarbonara W. 2018. "Computational efficiency and accuracy of sequential nonlinear cyclic analysis of carbon nanotube nanocomposites". *Advances in Engineering Software*, **125**: 126–135.
- [17] [Formica G](#), Milicchio F, Lacarbonara W. 2018. "Hysteretic damping optimization in carbon nanotube nanocomposites". *Composite Structures*, **194**: 633–642.
- [18] Morelli C, [Formica G](#), Pellicori S, Roselli M, Formica V. 2017. "Prediction of overall survival after 3 months of treatment using the NLR-over-the-time curve in pancreatic cancer patients". *Annals of Oncology*, **28**: Issue suppl_6.
- [19] [Formica G](#), Lacarbonara W. 2017. "Three-dimensional modeling of interfacial stick-slip in carbon nanotube nanocomposites". *International Journal of Plasticity*, **88**: 204–217.
- [20] Cetraro M, Lacarbonara W, [Formica G](#). 2016. "Nonlinear dynamic response of carbon nanotube nanocomposite microbeams". *Journal of Computational and Nonlinear Dynamics*, **12**(3), 031007.
- [21] [Formica G](#), Milicchio F. 2016. "Crack growth propagation using standard FEM". *Engineering Fracture Mechanics*, **165**: 1–18.
- [22] Formica V, Formica D, [Formica G](#). 2016. "The 'death pace' in the CO.17 trial". *European Journal of Cancer*, **53**: 1–4.
- [23] [Formica G](#), Lacarbonara W. 2015. "A nonlinear mechanical model for the fatigue life of thin-film carbon nanotube supercapacitors". *Composites Part B: Engineering*, **80**: 299–306.
- [24] Castellazzi G, Colla C, de Miranda S, [Formica G](#), Molari L, Ubertini F. 2015. "Coupled hygro-mechanical multiscale analysis of masonry walls". *Engineering Structures*, **84**: 266–278.
- [25] [Formica G](#), Lembo M, Podio-Guidugli P. 2014. "An improved theory of laminated Reissner-Mindlin plates", *International Journal of Solids and Structures*, **51**: 1562–1575.
- [26] [Formica G](#), Talò M, Lacarbonara W. 2014. "Nonlinear modeling of carbon nanotube composites dissipation due to interfacial stick-slip", *International Journal of Plasticity*, **53**: 148–163.
- [27] [Formica G](#), Lembo M, Podio-Guidugli P. 2013. "Explicit and exact Levinson-type solutions for multilayered plates", *Archives of Mechanics*, **65**: 1–22.
- [28] Castellazzi G, Colla C, de Miranda S, [Formica G](#), Gabrielli E, Molari L, Ubertini F. 2013. "A coupled multiphase model for hygrothermal analysis of masonry structures and prediction of stress induced by salt crystallization", *Construction and Building Materials*, **41**: 717–731.
- [29] [Formica G](#), Lacarbonara W. 2013. "Damage model of carbon nanotubes debonding in nanocomposites", *Composite Structures*, **96**: 514–525.
- [30] [Formica G](#), Arena A, Lacarbonara W, Dankowicz H. 2013. "Coupling FEM with parameter continuation for analysis and bifurcations of periodic responses in nonlinear structures", *Journal of Computational and Nonlinear Dynamics*, **8** (2), ISSN: 1555-1423, doi: 10.1115/1.4007315, art. no. 021013.
- [31] [Formica G](#), Milicchio F. 2010. "Unconditionally Stable Convergence with Power Principle-based Time-Integration Schemes", *CMES Computer Modeling in Engineering & Sciences*, **60** (3): 199–220.
- [32] [Formica G](#), Lacarbonara W, Alessi R. 2010. "Vibrations of carbon nanotube-reinforced composites", *Journal of Sound & Vibration*, **329** (10): 1875–1889.
- [33] Brasile S, Casciaro R, [Formica G](#). 2010. "Finite Element formulation for nonlinear analysis of masonry walls", *Computers & Structures*, **88** (3–4): 135–143.
- [34] Bilotta A, [Formica G](#), Turco E. 2010. "Performances of a high-continuity Finite Element in three-dimensional elasticity", *International Journal for Numerical Methods in Biomedical Engineering*, **26** (9): 1155–1175.

- [35] Brasile S, Casciaro R, [Formica G](#). 2007. "Multilevel approach for brick masonry walls - Part I: A numerical strategy for the nonlinear analysis", *Computer Methods in Applied Mechanics and Engineering*, **196** (49–52): 4934–4951.
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