

Curriculum vitae di *Francesco Ubertini*

ERC panel: *PE8 (PE8_3, PE8_4)*

PERSONAL DETAILS

Ubertini, Francesco

Birthdate: February 6, 1970

ORCID: 0000-0001-7662-0108

URL for web site: unibo.it/sitoweb/francesco.ubertini

• **Education and key qualifications**

1994-1998 PhD in Structural Mechanics, University of Bologna, Italy

1994 Master degree in Civil Engineering cum laude, University of Bologna, Italy

• **Current positions**

2007 – Full professor of Mechanics of Solids and Structures, University of Bologna, Italy

2015 – Benedictine Academician, Academy of Sciences of Bologna Institute, Italy

2022 – VicePresident of Italian Research Center on High-Performance Computing, Big Data and Quantum Computing – ICSC (supercomputing-icsc.it), Italy

2021 – President of CINECA (cineca.it), Italy

2021 – President of International Foundation Big Data and Artificial Intelligence for Human Development – IFAB (ifabfoundation.org)

2021 – Independent member of the Board of Directors/Advisory Board of some companies

• **Previous positions**

2019 – 2023 Board member of European University Association (eua.eu)

2015 – 2021 Rector of Alma Mater Studiorum, University of Bologna (unibo.it)

2017 – 2021 Board member of Italian University Rectors Conference (cruai.it)

2015 – 2021 President of Federico Zeri Foundation (fondazionezeri.unibo.it)

2015 – 2021 President of Bologna Business School (bbs.unibo.eu)

2016 – 2021 Governing Council member of the Observatory of the Magna Charta Universitatum

RESEARCH ACTIVITY

The research activity is focused on various aspects of **Structural Mechanics** and **Computational Mechanics**, encompassing both theoretical developments and applied contributions across multiple engineering domains. Main research topics include modelling and simulation, coupled problems, computational wind engineering, structural health monitoring, historical masonry structures, and advanced materials.

He has been involved, in various capacities, in numerous national and European research projects. He has served as chair and member of organizing and scientific committees for several national and international conferences, and has acted as expert reviewer for national research evaluation agencies as well as for the European Commission.

Author of over 80 articles in peer-reviewed international journals and more than 200 conference proceedings. A selection of 20 papers on the various topics is collected below over the last decade.

Bibliometric indicators (August 2025) – Scopus: H-index 30, Indexed papers 112 since 1999, Total number of citations 3150 by 2517 documents, co-authors 121

Modelling and Simulation

GBT post-buckling analysis based on the Implicit Corotational Method, Ruggerini, A.W., Madeo, A., Gonçalves, R., Camotin, D., Ubertini, F., de Miranda, S., *International Journal of Solids and Structures*, 2019, 163, 40–60

A high performance flexibility-based GBT finite element, de Miranda, S., Madeo, A., Melchionda, D., Ubertini, F., *Computers and Structures*, 2015, 158, 285–307

- Virtual testing of existing semi-rigid rockfall protection barriers, de Miranda, S., Gentilini, C., Gottardi, G., Govoni, L., Mentani, A., Ubertini, F., *Engineering Structures*, 2015, 85, 83–94
- A physically-based analytical relationship for practical prediction of leakage in longitudinally cracked pressurized pipes, de Miranda, S., Molari, L., Scalet, G., Ubertini, F., *Engineering Structures*, 2014, 79, 142–148
- On the relationship of the shear deformable Generalized Beam Theory with classical and non-classical theories, de Miranda, S., Madeo, A., Miletta, R., Ubertini, F., *International Journal of Solids and Structures*, 2014, 51(21-22), 3698–3709
- Hydroelastic analysis of hull slamming coupling lattice Boltzmann and finite element methods, De Rosis, A., Falcucci, G., Porfiri, M., Ubertini, F., *Computers and Structures*, 2014, 138, 24–35
- Design of falling rock protection barriers using numerical models, Gentilini, C., Gottardi, G., Govoni, L., Mentani, A., Ubertini, F., *Engineering Structures*, 2013, 50, 96–106

Computational Wind Engineering

- Early stages wind load assessment using Computational Fluid Dynamics: The new Bologna Stadium roof, Xing, J., Patruno, L., de Miranda, S., Pardini, S., Majowiecki, M., Ubertini, F., *Structures*, 2023, 47, 1912–1926
- Wind loads prediction using LES: Inflow generation, accuracy and cost assessment for the case of Torre Gioia 22, Xing, J., Patruno, L., Pozzuoli, C., Gonçalo, P., de Miranda, S., Ubertini, F., *Engineering Structures*, 2022, 262, 114292
- Flow field around a 5:1 rectangular cylinder using LES: Influence of inflow turbulence conditions, spanwise domain size and their interaction, Ricci, M., Patruno, L., de Miranda, S., Ubertini, F., *Computers and Fluids*, 2017, 149, 181–193
- Numerical study of a twin box bridge deck with increasing gap ratio by using RANS and LES approaches, de Miranda, S., Patruno, L., Ricci, M., Ubertini, F., *Engineering Structures*, 2015, 99, 546–558
- On the evaluation of bridge deck flutter derivatives using RANS turbulence models, Brusiani, F., de Miranda, S., Patruno, L., Ubertini, F., Vaona, P., *Journal of Wind Engineering and Industrial Aerodynamics*, 2013, 119, 39–47

Coupled problems

- A staggered multiphysics framework for salt crystallization-induced damage in porous building materials, Castellazzi, G., D'Altri, A.M., de Miranda, S., Emami, H., Molari, L., Ubertini, F., *Construction and Building Materials*, 2021, 304, 124486
- Coupled hygro-mechanical multiscale analysis of masonry walls, Castellazzi, G., de Miranda, S., Formica, G., Molari, L., Ubertini, F., *Engineering Structures*, 2015, 84, 266–278
- A coupled multiphase model for hygrothermal analysis of masonry structures and prediction of stress induced by salt crystallization, Castellazzi, G., Colla, C., De Miranda, S., Formica, G., Gabrielli, E., Molari, L., Ubertini, F., *Construction and Building Materials*, 2013, 41, 717–731
- A partitioned approach for two-dimensional fluid-structure interaction problems by a coupled lattice Boltzmann-finite element method with immersed boundary, De Rosis, A., Ubertini, S., *Journal of Fluids and Structures*, 2014, 45, 202–215

Structural Health Monitoring

- Regional-scale bridge condition monitoring using InSAR displacements and environmental data, Quqa, S., Palermo, A., Ubertini, F., Marzani, A., *Structural Health Monitoring*, 2025, 24, 2271–2291

Historical Masonry Structures

- An innovative numerical modeling strategy for the structural analysis of historical monumental buildings, Castellazzi, G., D'Altri, A.M., de Miranda, S., Ubertini, F., *Engineering Structures*, 2017, 132, 229–248

Advanced materials

- Determination of the interfacial cohesive material law for SRG composites bonded to a masonry substrate, Santandrea, M., Focacci, F., Mazzotti, C., Ubertini, F., Carloni, C., *Engineering Failure Analysis*, 2020, 111, 104322
- Theoretical and numerical modeling of shape memory alloys accounting for multiple phase transformations and martensite reorientation, Auricchio, F., Bonetti, E., Scalet, G., Ubertini, F., *International Journal of Plasticity*, 2014, 59, 30–54