2026, MARCH

ROSALBA FERRARI

CURRICULUM VITAE

PERSONAL DATA

Born in Bergamo, Italy
Italian Citizenship

Addresses – Office

University of Bergamo
Department of Engineering and Applied Sciences
viale G. Marconi, 5
I-24044 DALMINE (BG), Italy

Phone: +39.035.205.2379 – Fax: +39.035.205.2310
email: rosalba.ferrari@unibg.it
Website: https://unibg.unifind.cineca.it/resource/person/483

ORCiD: orcid.org/0000-0002-3989-713X
Scopus ID: 36816021000
WOS ID: G-2433-2019
Google Scholar

CURRENT POSITION

2022, Dec	Associate Professor in Mechanics of Solids and Structures Dept. of Engineering and Applied Sciences, University of Bergamo
2024, ott.	Deputy Director of the Dept. of Engineering and Applied Sciences, University of Bergamo Departmental Contact Person for the Third Mission (Knowledge Transfer and Outreach)

RESEARCH INTERESTS

- Structural Health Monitoring, identification and model updating
- Signal Processing
- Heterogeneous Data Fusion techniques
- Evolutive elastoplastic structural analysis
- Limit Analysis of (large scale) structures
- Structural analysis through graphical-analytical methods
- Structural analysis and FEM modelling of historic constructions
- Static and dynamic FEM analyses
- Model Order Reduction methods for modal analysis of structures

DEGREES

2003, Jul 5	High School Diploma, Technical School, Building Speciality, Bergamo.
2006, Dec 21	Degree in Building Engineering, First Level Degree, University of Bergamo.
2009, Sep 24	Degree in Building Engineering, Second Level Degree, University of Bergamo.
2011, Mar 1	State Examination for Professional Qualification in Engineering, University of Bergamo, II Session 2010.

2013, Apr 15	Doctoral Degree in Machatronics, Information Technology, New Technologies and Mathematical Methods, XXV Cycle (three years Doctoral Programme), University of Bergamo, Dalmine. Doctoral Thesis: *An Elastoplastic Finite Element Formulation for the Structural Analysis of Truss Frames with Application to a Historical Iron Arch Bridge*, Advisor: Prof. Egidio Rizzi, Co-advisor: Prof. Giuseppe Cocchetti.

RESEARCH EXPERIENCES

2009, Oct – Dec	Scientific responsible of the research contract: *Structural analysis of a historical and monumental iron bridge (Analisi strutturale di ponte ad arco in ferro di interesse storico e monumentale)*, funded by the University of Bergamo, Faculty of Engineering (Dalmine), Dept. of Design and Technologies.
2010, Jun – 2011, May	Appointed as Research Assistant ("Assegnista di Ricerca") at the Dept. of Design and Technologies, University of Bergamo, Faculty of Engineering (Dalmine). Research topic: *Structural analysis of the Paderno d'Adda iron bridge (Analisi strutturale del ponte in ferro di Paderno d'Adda)*. Advisor: Prof. Egidio Rizzi.
2012, Feb – 2013, Jan	Appointed as Research Assistant ("Assegnista di Ricerca") at the Dept. of Design and Technologies, University of Bergamo, Faculty of Engineering (Dalmine). Research topic: *Elastoplastic analysis of an iron bridge of historical and monumental interest (Analisi elastoplastica di ponte in ferro di interesse storico e monumentale)*. Advisor: Prof. Egidio Rizzi.
2014, Jun – 2015, May	Appointed as Research Assistant ("Assegnista di Ricerca") at the Dept. of Engineering (Dalmine), in collaboration with the Institute of Structural Engineering (IBK), ETH Zürich, CP Prof. Eleni Chatzi. Research topic: *Comprehensive diagnostic Structural Health Monitoring campaign for local strategic bridges*. Research grant awarded within the project ITALYR (Italian TALented Young Researchers) 2014 – University of Bergamo. Advisor: Prof. Egidio Rizzi.
2015, Oct – 2017, Nov	Appointed as Research Assistant ("Assegnista di Ricerca") at the Dept. of Engineering (Dalmine), in collaboration with the Institute of Strucutral Engineering (IBK), ETH Zürich, CP Prof. Eleni Chatzi. Research topic: *Heterogeneous sensor fusion for reducing uncertainty in structural assessment and model updating*. Advisor: Prof. Egidio Rizzi.
2017, Dec – 2020, Nov	Appointed as Research Assistant ("Ricercatore a Tempo Determinato RTD-A") at the University of Bergamo, Dept. of Engineering and Applied Sciences (Dalmine).
2021, Jan – 2022, Nov	Appointed as Research Assistant ("Ricercatore a Tempo Determinato RTD-B") at the University of Bergamo, Dept. of Engineering and Applied Sciences (Dalmine).
2020, Jan – 2023, Sep	Scientific referent for the industry research contract: *Valutazione dello stato di conservazione del ponte in ferro di Paderno d'Adda (1889) – Fase esecutiva (Assessment of the state of conservation of the Paderno d'Adda bridge (1889) – execution phase)*. Funding partner: Rete Ferroviaria Italiana S.p.A. (Italian Railway Network (Company)).

PARTICIPATION IN NATIONAL AND INTERNATIONAL RESEARCH PROJECTS

- Principal Investigator (PI) of the national research project PRIN 2022. Title of the project: *Digitalized life-cycle management of historic bridges by an integrated monitoring and modelling CDE platform – HBridgeIM (Historic Bridge Information Modelling)*; Main ERC field: PE – Physical Sciences and Engineering; Project Code 2022744YM9, CUP F53C24000930006. Project admitted for financing (4 February 2025). Total approved eligible cost: €209,716. https://hbridgeim.unibg.it/
- Member of Research Unit in national research project PRIN 2017. Principal Investigator: Prof. Marco Savoia; Title of the project: *Life-long optimized structural assessment and proactive maintenance with pervasive sensing*

techniques; Main ERC field: PE – Physical Sciences and Engineering; Resp. Research Unit University of Bergamo (Unit 2): Prof. Paolo Riva. Project admitted for financing (13 March 2019).

INTERNATIONAL RESEARCH EXPERIENCES

2012, Jun 8 – Dec 8	Visiting PhD at the **Dept. of Civil Engineering and Engineering Mechanics, Columbia University**, New York, USA, CP Prof. Raimondo Betti and Prof. Andrew W. Smyth.
2015, Jan 11 – Feb 28 2016, Jan 23 – Mar 25	Research stay at the **Dept. of Civil, Environmental and Geomatic Engineering, Institute of Structural Engineering (IBK), ETH Zürich**, CP Prof. Eleni Chatzi.
2018, Apr 25 – May 3	Research stay at the **Institute of Sound and Vibration Research, Faculty of Engineering and Physical Sciences, University of Southampton**, England, CP Prof. Maryam Ghandchi Tehrani.
2018, Jun 25 – 29	Research stay at the **Dept. of Mechanical Engineering, ORT Braude College**, Karmiel, Israel, within the call Erasmus+ Higher Education Staff Mobility – Key Action 107 outgoing teaching mobility, Academic Year 2017/18.
2018, Nov 15 – 19	Visiting at the **Dept. of Structural Mechanics, Faculty of Civil Engineering, Technical University of Cluj-Napoca**, Romania, within the call Erasmus+ Higher Education Mobility – Key Action 1 outgoing teaching mobility, Academic Year 2018/19.
2023, Oct 16 – 18	Visiting at the **Riga Technical University (RTU)**, Latvia, within the 2023 Italian Language Week (event organised by the Embassy of Italy in Latvia, in collaboration with the Riga Technical University and the Art Academy of Latvia).
2024, Jul 5 – Jul 20	Research stay at the **Dept. of Civil, Environmental and Geomatic Engineering, Institute of Structural Engineering (IBK), ETH Zürich**, hosted by Prof. Eleni Chatzi, Chair of "Structural Mechanics & Monitoring (SMM)".
2025, Sep 6 – 11	Visiting at the **Faculty of Civil and Mechanical Engineering, Riga Technical University (RTU)**, Latvia, within the call Erasmus Plus KA1 call 2024, Academic Year 2025/26.

TEACHING EXPERIENCE & SEMINARS

Since AY 2008/2009	Supporting academic activity for *Mechanics of Solids and Structures* courses, University of Bergamo, School of Engineering (Dalmine).
2016, Mar 3	Lecturer in a seminar on *Heterogeneous sensor fusion for modal dynamic identification of a historic reinforced concrete bridge*, **Dept. of Civil, Environmental and Geomatic Engineering, Institute of Structural Engineering (IBK), ETH Zürich**.
2018, May 1	Lecturer in a seminar on *FEM model updating and Limit Analysis of structures: A coupled approach toward Structural Health Monitoring*, **Institute of Sound and Vibration Research, Faculty of Engineering and Physical Sciences, University of Southampton**, England.
2018, Jun 26	Lecturer in a seminar on *FEM model updating and Limit Analysis of structures: A coupled approach toward Structural Health Monitoring*, **Department of Mechanical Engineering, ORT Braude College**, Karmiel, Israel.
2018, Jun 25 – 29	Lecturer in a seminar of the course *Computational Structural Mechanics* (16 hours), **Department of Mechanical Engineering, ORT Braude College**, Karmiel, Israel, within the call Erasmus+ Higher Education Staff Mobility – Key Action 107 outgoing teaching mobility, Academic Year 2017/18.

2018, Nov 15 – 19	Lecturer in a seminar on *Introduction to the Computational Mechanics of Solids and Structures* (8 hours of teaching), **Dept. of Structural Mechanics, Faculty of Civil Engineering, Technical University of Cluj-Napoca**, Romania, within the call Erasmus+ Higher Education Mobility – Key Action 1 outgoing teaching mobility, Academic Year 2018/19.
AY 2018/2019	Lecturer of the course *Meccanica Computazionale dei Solidi e delle Strutture (Computational Mechanics of Solids and Structures)*, for students enrolled in the Master's programs in Building and Mechanical Engineering, **University of Bergamo**.
Since AY 2019/2020	Lecturer of the course *Computational Mechanics of Solids and Structures*, for students enrolled in the Master's programs in Building and Mechanical Engineering, **University of Bergamo**.
AY 2019/2020 – AY 2020/2021	Lecturer of the PhD course *Structural Health Monitoring, System Indentification and Model Updating*, PhD Program in Engineering and Applied Sciences, **University of Bergamo**.
Since AY 2019/2020	Lecturer of the course *Structural Monitoring*, for students enrolled in the Master's programs in Mechatronics and Smart Technology Engineering and in Building Engineering, **University of Bergamo**.
2021, Jun 18	Lecturer in a seminar on *Modern Applications of Limit Analysis Evolutive and Direct Computational Methods in Structural Mechanics*, within the PhD course "Limit Analysis of Solids and Structures" (online), PhD programme in Civil Engineering and Architecture, **University of Parma**, CP Prof. A. Spagnoli.
2023, Oct 17	Lecturer in a seminar on *FEM Model Updating and Limit Analysis of structures: a coupled approach toward Structural Health Monitoring*, **Riga Technical University (RTU)**, Latvia, within the 64th International Scientific Conference of Riga Technical University.
Since AY 2024/2025	Teacher of the course *Meccanica dei Solidi (Mechanics of Solids)*, for students enrolled in the second year of the Bachelor's degree in Energy Sustainability Engineering, **University of Bergamo**.
2025, Jun 30	Lecturer in seminars on *Introduction to Structural Health Monitoring (SHM) based on signal processing* and *Modal dynamic identification of the historic San Michele Bridge (Italy, 1889)*, Erasmus+ Blended Intensive Programme (BIP) *Structural Health Monitoring* – Virtual Component, **Riga Technical University (RTU)**, Latvia.
2025, Sep 8 – 11	Teaching activities and students supervision in the Erasmus+ Blended Intensive Programme (BIP) *Structural Health Monitoring* – In-Person Component, **Riga Technical University (RTU)**, Latvia.

MISCELLANEA

- Since 2018, member of the Italian Society of Mechanics of Solids and Structures (Società Italiana di Scienza delle Costruzioni (SISCo)).
- Since 2019, member EUROMECH, European Mechanics Society.
- Since 2019, member AIMETA, Associazione Italiana di Meccanica Teorica e Applicata, Gruppo Italiano di Meccanica Computazionale - GIMC.
- Since January 2021, Assistant Editor for the international Journal *Meccanica – An International Journal of Theoretical and Applied Mechanics AIMETA*, Springer. https://www.springer.com/journal/11012
- Since July 2022, member of the Council of the Order of Engineers of the Province of Bergamo – *Consiglio dell'Ordine degli Ingegneri della Provincia di Bergamo*.
- Reviewer for the following international scientific journals:
  Bulletin of Earthquake Engineering, Electronics, Engineering Structures, Journal of Optimization Theory and Appli-

cations, Journal of Sound and Vibration, Journal of Vibration and Control, Measurements, Meccanica, Mechanical Systems and Signal Processing, Sensors.

INTRA–UNIBG ACTIVITIES

- PhD Student Representative (three years PhD Programme, XXV Cycle).
- Member of the Board of Examiners for the State Examination for Professional Qualification in Engineering, University of Bergamo, first and second sessions 2016 and first session 2017, as an expert in Civil Engineering.
- Initiator of a framework agreement ("Accordo Quadro") between University of Bergamo and National Railway Company "Rete Ferroviaria Italiana S.p.A.". Agreement approved on 10 July 2017 by the Academic Senate of the University of Bergamo.
- Member of the PhD Board of Professors of the PhD Program in Engineering and Applied Sciences, Head Coordinator: Prof. Valerio Re, University of Bergamo, since AY 2019/2020 (XXXIII Cycle).
- Contact Person for the Framework Agreement on cultural and scientific collaboration between the University of Bergamo and the Saint Petersburg State University of Architecture and Civil Engineering, Saint Petersburg, Russia. Agreement approved by the Department of Engineering and Applied Sciences Council on 18 October 2019.
- Co-Supervisor of PhD Student at the University of Bergamo: Gabriele Ravizza, XXXIII Cycle (2017 – 2020), PhD Program in Engineering and Applied Sciences. Thesis title: *Modal dynamic identification of civil structures via inverse analysis based on Heterogeneous Data Fusion and post-processing*, 17 May 2021. Main Supervisor: Prof. E. Rizzi.
- Supervisor of 17 Bachelor's and Master's theses.
- Member of the PhD Board of Professors of the PhD Program in Sustainable Technologies for Industrial and Construction Engineering (SUSTAIN) and Contact Person for doctoral curricula and related teaching planning, Head Coordinator: Prof. Alessandra Marini, University of Bergamo, since AY 2024/2025 (XL Cycle).
- Supervisor of PhD Student at the University of Bergamo: Michele Guerini (XL Cycle), PhD Program in Sustainable Technologies for Industrial and Construction Engineering (SUSTAIN). Research project title: *Structural Assessment of Infrastructures via Sensory Feedback and Integrated Modelling Approach*.
- Deputy Director of the Dept. of Engineering and Applied Sciences, University of Bergamo, since October 2024.
- Contact Person for Third Mission and Public Engagement of the Department of Engineering and Applied Sciences, University of Bergamo, since October 2024.

PARTICIPATION AT NATIONAL AND INTERNATIONAL CONFERENCES

- **Presentations at National and International Conferences**
  - *14th International Conference on Structural Analysis of Historical Constructions (SAHC 2025)*, EPFL, Lausanne, Switzerland, 15-17 September 2025.
  - *International Conference on Innovative Materials, Structures, and Technologies (IMST2025)*, Riga, Latvia, 10-12 September 2025.
  - *6th International Conference on Uncertainty Quantification in Computational Science and Engineering (UNCECOMP 2025)*, Rhodes, Grece, 15-18 June 2025.
  - *XXVI Conference of the Italian Association of Theoretical and Applied Mechanics – AIMETA 2024*, Rome, Italy, 2-6 September 2024.
  - *2nd Italian Workshop on Shell and Spatial Structures (IWSS), Thematic Session "Monumental buildings and historical case studies: retrofitting and restoration"*, Turin, Italy, 26-28 June 2023.
  - *25th International Congress of Theoretical and Applied Mechanics (25th ICTAM), ICTAM Milano 2020+1*, Italy (online), 22-27 August 2021.

  - *Third International Online Scientific and Practical Conference "Reconstruction and Restoration of Architectural Heritage" (RRAH 2021)*, Italy, 24-27 March 2021.
  - *XXIV Conference of the Italian Association of Theoretical and Applied Mechanics* – AIMETA 2019, Rome, Italy, 15th-19th September 2019. Title of the presentation: *New computational Limit Analysis approaches for structural optimization problems*, Book of Abstracts, Category: MS06–Shell and spatial structures, p. 213. https://www.aimeta.it/index.php/chi-siamo/congressi
  - *9th International Conference on Computational Methods* – ICCM2018, Rome, Italy, 6th-10th August 2018.
  - *1st ECCOMAS Thematic Conference on International Conference on Uncertainty Quantification in Computational Sciences and Engineering* – UNCECOMP 2015, Crete Island, Greece, 25-27 May 2015.
  - *5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering* – COMPDYN 2015, Crete Island, Greece, 25-27 May 2015.
  - *Structural Engineering World Congress* – SEWC 2011, Como, Italy, 4-6 April 2011.
  - *7th International Conference on Structural Analysis of Historic Construction* – SAHC10, Shanghai, China, 6-8 October 2010.
  - *34th International Symposium on Bridge and Structural Engineering, Venice, 2010* – IABSE2010, Venice, 22-24 September 2010
  - *6th International Conference on Structural Analysis of Historic Construction* – SAHC08, Bath, UK, 2-4 July 2008.

- **Co-Organizer (with A. Madeo and F. Marmo) of the Mini-Symposium**: *MS07-Limit analysis, plasticity, instability, and bifurcation*, XXVI AIMETA Congress, Italian Association of Theoretical and Applied Mechanics (AIMETA), Napoli, Italy, September 2-6, 2024.

PUBLICATIONS

Contributions are classified as follows: Articles in Refereed International Journals; Book Chapters; Articles in Proceedings of International Conferences; Theses; Technical Reports.

- **Articles in Refereed International Journals**

  1. Froio D., Ferrari R., Rizzi E. (2026) *Constitutive structural response of Concrete Damaged Plasticity model under Willam's test*. **Frontiers in Materials**, section Environmental Degradation of Materials, Research Topic: Multi-Scale Modeling of Heterogeneities in Quasi-Brittle Material Degradation - A Tribute to the Memory of Prof. Kaspar Willam (1940-2024), Invited contribution, Manuscript ID: 1800938, p. 1-45, ISSN: 2296-8016, Frontiers Media SA, Lausanne, Switzerland. https://www.frontiersin.org/journals/materials/articles/10.3389/fmats.2026.1800938/abstract

  2. Cornaggia A., Ferrari R., Zola M., Rizzi E., Gentile C. (2022) *Signal processing methodology of response data from a historical arch bridge toward reliable modal identification*. **Infrastructures**, Special Issue "Structural Health Monitoring of Civil Infrastructures", Accepted: 16 May 2022, Published: 23 May 2022, 7(5, 74):1–28, doi:10.3390/infrastructures7050074, ISSN: 2412-3811, MDPI, Basel, Switzerland. https://www.mdpi.com/2412-3811/7/5/74

  3. Lorenzi S., Cabrini M., Coppola L., Ferrari C., Ferrari R., Rizzi E., Pastore T., Spirolazzi G., Pisanelli G., Cioffi C., Lizzori E. (2021) *Studio dei fenomeni di corrosione in fessura di ponti chiodati di valenza storica – Pack rust corrosion evaluation on historical riveted steel bridges* (in Italian). **Metallurgia Italiana** – International Journal of the Italian Association for Metallurgy, 113(3):39–36, March 2021, ISSN: 0026-0843, Associazione Italiana di Metallurgia (AIM), Milano, Italy.

  4. Ravizza G., Ferrari R., Rizzi E., Dertimanis V. (2021) *On the denoising of structural vibration response records from low-cost sensors: a critical comparison and assessment*. **Journal of Civil Structural Health Monitoring**, Accepted: 18 June 2021, Published: 09 July 2021, 11(5, November 2021):1201–1224, doi:10.1007/s13349-021-00502-y, ISSN: 2190-5452, Springer-Verlag GmbH Germany, part of Springer Nature.

5. Chiorean C.G., Passera D., Ferrari R., Rizzi E. (2020) *An implementation for 2nd-order M-N coupling and geometric stiffness adaptation in tapered beam-column elements*. **Engineering Structures**, Accepted: 17 August 2020, Available online: 16 September 2020, Volume 225, 15 December 2020, 111241 (20 pages), doi:10.1016/j.engstruct.2020.111241, ISSN: 0141-0296, Elsevier B.V., Amsterdam, NL.

6. Pastore T., Cabrini M., Lorenzi S., Rizzi E., Ferrari R., Coppola L., Spirolazzi G., Pisanelli G., Cioffi C., Lizzori E. (2020) *Corrosion phenomena of historic metallic infrastructures [Fenomeni di corrosione delle infrastrutture metalliche di rilevanza storica]*. **Metallurgia Italiana** – International Journal of the Italian Association for Metallurgy, 112(4):43–48, April 2020, ISSN: 0026-0843, Associazione Italiana di Metallurgia (AIM), Milano, Italy.

7. Froio D., Verzeroli L., Ferrari R., Rizzi E. (2020) *On the numerical modelization of moving load beam problems by a dedicated parallel computing FEM implementation*. **Archives of Computational Methods in Engineering**, Accepted 18 June 2020, Published online: 18 August 2020 (62 pages), https://doi.org/10.1007/s11831-020-09459-5, Springer.

8. Ferrari R., Cocchetti G., Rizzi E. (2020) *Evolutive and kinematic Limit Analysis algorithms for large-scale 3D truss-frame structures: comparison application to historic iron bridge arch*. **International Journal of Computational Methods**, First published online: 5 November 2019, 17(5, 1 May 2020):1940020 (18 pages), doi:10.1142/S0219876219400206, ISSN: 0219-8762, World Scientific Publishing Company, Singapore.

9. Ferrari R., Cocchetti G., Rizzi E. (2020) *Reference structural investigation on a 19th-century arch iron bridge loyal to design-stage conditions*. **International Journal of Architectural Heritage**, Accepted 23 Apr 2019, Published online: 05 Jul 2019, 14(10):1425–1455, https://doi.org/10.1080/15583058.2019.1613453, Taylor & Francis.

10. Ferrari R., Froio D., Rizzi E., Gentile C., Chatzi E.N. (2019) *Model updating of a historic concrete bridge by sensitivity- and global optimization-based Latin Hypercube Sampling*. **Engineering Structures**, 179(15 January 2019):139–160, doi:10.1016/j.engstruct.2018.08.004, ISSN: 0141-0296, Elsevier B.V., Amsterdam, NL.

11. Ferrari R., Cocchetti G., Rizzi E. (2018) *Effective iterative algorithm for the Limit Analysis of truss-frame structures by a kinematic approach*. **Computers and Structures**, Final version published online: 19 December 2017, 197(15 February 2018):28–41, doi:10.1016/j.compstruc.2017.11.018, ISSN: 0045-7949, Elsevier B.V., Amsterdam, NL.

12. Ferrari R., Cocchetti G., Rizzi E. (2018) *Computational elastoplastic Limit Analysis of the Paderno d'Adda bridge (Italy, 1889)*. **Archives of Civil and Mechanical Engineering**, 18(1):291–310, Final article available online: 30 August 2017, doi:10.1016/j.acme.2017.05.002, ISSN: 1644-9665, Politechnika Wrocławska, Published by Elsevier Sp. z o.o., Wroclaw, Poland.

13. Ravizza G., Ferrari R., Rizzi E., Chatzi E.N. (2018) *Effective Heterogeneous Data Fusion procedure via Kalman filtering*. **Smart Structures and Systems**, 22(5):631–641, doi:10.12989/sss.2018.22.5.631, ISSN: 1738-1584 (Print), 1738-1991 (Online), Techno-Press, Ltd., Yuseong, Daejeon 305-600 Korea.

14. Pioldi F., Ferrari R., Rizzi E. (2017) *Seismic FDD modal identification and monitoring of building properties from real strong-motion structural response signals*. **Structural Control and Health Monitoring**, First Online: 9 February 2017 (20 pages), doi:10.1002/stc.1982, Print ISSN: 1545-2255, Online ISSN: 1545-2263, John Wiley & Sons, Inc., Chichester, West Sussex, UK.

15. Pioldi F., Ferrari R., Rizzi E. (2017) *Earthquake structural modal estimates of multi-storey frames by a refined Frequency Domain Decomposition algorithm*. **Journal of Vibration and Control**, First published online: 8 October 2015 (27 pages), 23(13):2037–2063, doi:10.1177/1077546315608557, Print ISSN: 1077-5463, Online ISSN: 1741-2986, jvc.sagepub.com, SAGE Publications, London, UK.

16. Ferrari R., Pioldi F., Rizzi E., Gentile C., Chatzi E.N., Serantoni E., Wieser A. (2016) *Fusion of Wireless and Non-Contact Technologies for the Dynamic Testing of a Historic RC Bridge*. **Measurement Science and Tech-**

nology, Special Feature on "Dense Sensor Networks for Mesoscale SHM: Innovations in Sensing Technologies and Signal Processing", 27(12), 26 October 2016, Article number 124014 (15 pages), doi:10.1088/0957-0233/-27/12/124014, Online ISSN: 1361-6501, Print ISSN: 0957-0233, Institute of Physics, IOP Publishing Ltd., Bristol, UK.

17. Ferrari R., Cocchetti G., Rizzi E. (2016) *Limit Analysis of a historical iron arch bridge. Formulation and computational implementation*. **Computers and Structures**, Final version published online: 20 August 2016, 175(15 October 2016):184–196, doi:10.1016/j.compstruc.2016.05.007, ISSN: 0045-7949, Elsevier B.V., Amsterdam, NL.

18. Pioldi F., Ferrari R., Rizzi E. (2016) *Output-only modal dynamic identification of frames by a refined FDD algorithm at seismic input and high damping*. **Mechanical Systems and Signal Processing**, First available online: 5 September 2015, Final version published online: 10 November 2015, 68-69(February 2016):265–291, doi:10.1016/j.ymssp.2015.07.004, Online ISSN: 0888-3270, Elsevier B.V., Amsterdam, NL.

19. Ferrari R., Cocchetti G., Rizzi E. (2013) *Elastoplastic structural analysis of the Paderno d'Adda bridge (Italy, 1889) based on Limit Analysis*. **Wiadomości Konserwatorskie - Journal of Heritage Conservation**, Nr. 34/-2013, pp. 28–35, ISSN: 0860-2395, Stowarzyszenie Konserwatorów Zabytków - Association of Monument Conservators, Poland, https://suw.biblos.pk.edu.pl/downloadResource&mId=929436.

20. Ferrari R., Facheris M., Rizzi E. (2010) *Structural Analysis of the Paderno d'Adda Bridge (Italy, 1889)*. Periodical of **Advanced Materials Research**, 133–134(October 2010):459–465, doi:10.4028/www.scientific.net/-amr.133-134.459, ISSN: 1662-8985, Trans Tech Publications Ltd., Switzerland. https://doi.org/10.4028/www.scientific.net/amr.133-134.459

- **Book Chapters**

1. Cocchetti G., Liu R., Cornaggia A., Ferrari R., Rizzi E. (2023), *Elastic-plastic optimisation of a cable-rib satellite antenna*. **Direct Methods for Limit State of Materials and Structures**, Lecture Notes in Applied and Computational Mechanics 101, Eds. Giovanni Garcea and Dieter Weichert, contribution earlier presented at DM2022 Workshop, University of Calabria, Arcavacata di Rende, Italy, 28 June 2022, pp. 43–67. Springer, Cham. https://doi.org/10.1007/978-3-031-29122-7_3

2. Ferrari R., Rizzi E., Brioschi M.S., Dertimanis V. (2021) *Design of an effective Structural Health Monitoring platform for the Paderno d'Adda bridge (1889)*. Third International Online Scientific and Practical Conference "Reconstruction and Restoration of Architectural Heritage" (RRAH 2021), St. Petersburg, Russia, March 24-27, 2021, St Petersburg State University of Architecture and Civil Engineering (SPbGASU), **Reconstruction and Restoration of Architectural Heritage 2021**, Eds. Sergey Sementsov, Alexander Leontyev, Santiago Huerta, ISBN: 9781003136804, Taylor and Francis Group, CRC Press, London, pp. 210–215. https://dx.doi.org/10.1201/9781003136804-41

3. Ferrari R., Baldi E. (2021) *Il viadotto di Paderno sull'Adda*. **Atti dell'Ateneo di Scienze, Lettere ed Arti di Bergamo**, Vol. 83, 14 pages. http://hdl.handle.net/10446/208628

- **Articles in Proceedings of International Conferences**

1. Ferrari R., Lorenzi S., Lizzori E., Pastore T., Rizzi E. (2025) *Recent studies on the structural integrity and preservation of San Michele Bridge (1889, Italy)*. In Proc. of **14th International Conference on Structural Analysis of Historical Constructions (SAHC 2025)**, Savvas Saloustros, Katrin Beyer (eds.), EPFL, Lausanne, Switzerland, September 15-17, 2025, Full paper ID: 1727, eBook ISBN: 978-3-032-13469-1 (Due: 26 March 2026), Springer Cham, pp. 1–11. https://link.springer.com/book/9783032134684

2. Guerini M., Ferrari R., Rizzi E. (2025) *Structural Health Monitoring of the historic Paderno d'Adda Bridge (1889)*. **International Conference on Innovative Materials, Structures, and Technologies (IMST2025)**, Riga Technical University (RTU), Faculty of Civil and Mechanical Engineering, Riga, Latvia, September 10-12, 2025, Abstract Book, Eds. Sandris Rucevskis, Diana Bajare, Laura Vitola, Liga Puzule, RTU Press, Latvia,

ISBN (pdf): 978-9934-37-209-4, p. 93. https://ebooks.rtu.lv/product/imst2025-6th-international-conference-innovative-materials-structures-and-technologies-imst-2025/?lang=en

3. Guerini M., Ferrari R., Cocchetti G., Rizzi E. (2025) *Effective numerical time integration of structural dynamic responses under moving load*. In Proc. of **4th International Conference of Steel and Composite for Engineering Structures (ICSCES 2025)**, Piacenza Regional Campus of Politecnico di Milano, Piacenza, Italy, July 9-12, 2025, Eds. Milani G., Magagnini E., Khatir S., Published 26 October 2025, Lecture Notes in Civil Engineering, Vol. 746, Print ISBN: 978-3-032-04349-8, Online ISBN: 978-3-032-04350-4, Springer, Cham (Springer Nature Switzerland AG), pp. 734–747, doi:10.1007/978-3-032-04350-4_62. https://link.springer.com/content/pdf/10.1007/978-3-032-04350-4_62.pdf

4. Guerini M., Ermolli L., Stoura C.D., Ferrari R., Dertimanis V.K., Chatzi E.N., Rizzi E. (2025) *Modal dynamic identification of historic San Michele bridge (Italy, 1889)*. **COMPDYN 2025, 10th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering**, M. Papadrakakis, M. Fragiadakis (eds.), Rhodes Island, Greece, June 15-18, 2025, Eccomas Proceedia ID: 12784, Conference Proceeding ID: 26049, doi:10.7712/120125.12784.26049, ISSN: 2623-3347, ISBN: 978-618-5827-06-9, Category: C - TS 2 - Algorithms for Structural Health Monitoring, pp. 4923–4936. https://doi.org/10.7712/120125.12784.26049

5. Ermolli L., Guerini M., Stoura C.D., Ferrari R., Dertimanis V.K., Chatzi E.N., Rizzi E. (2025), *Combining experimental data and numerical modeling to analyze train-structure interaction on the historic San Michele bridge (Italy, 1889)*. **UNCECOMP, 6th ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Science and Engineering**, M. Papadrakakis, V. Papadopoulos, G. Stefanou (eds.), Rhodes Island, Greece, June 15-18, 2025, Eccomas Proceedia ID: 12355, Conference Proceeding ID: 21526, doi:10.7712/120225.12355.21526, ISSN: 2623-3339, ISBN: 978-618-5827-03-8, Category: U - MS 8 - Uncertainty Quantification in Vibration Based Monitoring and Structural Dynamics Simulations, pp. 266–277. https://doi.org/10.7712/120225.12355.21526

6. Froio D., Ferrari R., Rizzi E. (2025) *Constitutive response and consistency of Lee-Fenves concrete damage-plasticity model under non-proportional loadings*. In Proc. of **12th International Conference on Fracture Mechanics of Concrete and Concrete Structures - FraMCoS XII**, Dedicated to the Legacy of Prof. Kaspar Willam, TU Wien, Vienna, Austria, April 23-25, 2025, Eds. B.L.A. Pichler, Ch. Hellmich, P. Preinstorfer, MS17: Durability mechanics of concrete at the various scales of observation. A tribute to the memory of Prof. K. Willam, MS17-1:2, Paper 1273, pp. 1–11, doi:10.21012/FC12.1273. http://framcos.org/FraMCoS-12/Full-Papers/1273.pdf

7. Ferrari R., Cocchetti G., Rizzi E. (2024) *Computational Limit Analysis algorithms for large-scale truss-frame structures with interaction domain*. In Proc. of **XXVI Conference of the Italian Association of Theoretical and Applied Mechanics – AIMETA 2024**, Università degli Studi di Napoli "Federico II", Ingegneria, Napoli, Italy, September 2-6, 2024, Category: MS07-Limit analysis, plasticity, instability, and bifurcation, XXVI AIMETA Congress, Italian Association of Theoretical and Applied Mechanics (AIMETA), Eds. M. Fraldi, C. Marchioli, M.G. Naso, V. Parenti Castelli, L. Rosati, **Lecture Notes in Mechanical Engineering**, p. 1–5, Softcover ISBN: 978-3-032-17230-3, eBook ISBN: 978-3-032-17231-0, ISSN: 2195-4356, E-ISSN: 2195-4364, Springer, Cham.

8. Pizzigoni A., Beatini V., Beghini A., Paris V., Cocchetti G., Ferrari R., Rizzi E. (2024) *Fornix: the circular platform-frame*. In Proc. of **IASS 2024 Symposium**, Zurich, Switzerland, August 26-30, 2024, Redefining the Art of Structural Design, Eds. Philippe Block, Giulia Boller, Catherine DeWolf, Jacqueline Pauli, Walter Kaufmann, WG22 Architectural Geometry, Proceedings of IASS Annual Symposia, Paper 136, ISSN: 2518-6582, International Association for Shell and Spatial Structures (IASS), pp. 1-10.

9. Ferrari R., Zola M., Cornaggia A., Rizzi E. (2024) *Advanced signal processing methodology of vibration response data toward Structural Health Monitoring purposes*. In Proc. of **XII International Conference on Structural Dynamics, EURODYN 2023**, Delft, The Netherlands, July 02-05, 2023, Journal of Physics: Conference Series, Vol. 2647, Issue 18, Structural Health Monitoring, Paper 182040, ISSN: 1742-6596, IOP Publishing, Ltd, Bristol, UK, pp. 1–10. https://iopscience.iop.org/article/10.1088/1742-6596/2647/18/182040

10. Ferrari R., Cocchetti G., Rizzi E. (2024) *Effective Limit Analysis Computational Approaches for the Structural Characterization of Nervi's Palazzetto dello Sport*. In Proc. of **2nd Italian Workshop on Shell and Spatial Structures – IWSS 2023**, Torino, Italy, June 26–28, 2023, Italian Association for Shells and Spatial Structures, Eds. Gabriele S., Bertetto A.M., Marmo F., Micheletti A., Book of Abstracts, 22 June 2023, 1109, p. 137, **Lecture Notes in Civil Engineering**, 2024, Volume 437, p. 827–836, First Online: 31 October 2023, ISSN: 23662557, ISBN: 978-303144327-5, Springer Nature. https://doi.org/10.1007/978-3-031-44328-2_87

11. Cocchetti G., Cornaggia A., Ferrari R., Rizzi E. (2024) *Consistent Complementarity Problem Formulation for the Mechanical Modellisation of Spatial Cable–Rib Structures*. In Proc. of **2nd Italian Workshop on Shell and Spatial Structures – IWSS 2023**, Torino, Italy, June 26–28, 2023, Italian Association for Shells and Spatial Structures, Eds. Gabriele S., Bertetto A.M., Marmo F., Micheletti A., Book of Abstracts, 22 June 2023, 1084, p. 111, **Lecture Notes in Civil Engineering**, 2024, Volume 437, p. 672–682, First Online: 31 October 2023, ISSN: 23662557, ISBN: 978-303144327-5, Springer Nature. https://doi.org/10.1007/978-3-031-44328-2_70

12. Cornaggia A., Cocchetti G., Ferrari R., Abu-Salih S., Rizzi E. (2023) *Computational elastoplastic structural analysis of carbon nanotubes*. Abstracts of the **NanoInnovation 2023 Conference**, Roma, Italy, September 18-22, 2023, Eds. (Organizing Committee) Rossi M., Asinari P., Bersani M., Crescenzi M., Morandi V., Paolino D., Pirri C.F., Porcari A., Tosi G., Università degli Studi di Roma "La Sapienza".

13. Cornaggia A., Garbowski T., Cocchetti G., Ferrari R., Rizzi E. (2023) *Optimised structural modelling for inverse analysis parameter identification relying on dynamic measurements*. In Proc. of **9th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2023)**, Athens, Greece, June 12–14, 2023, Eds. Papadrakakis M., Fragiadakis M., Institute of Structural Analysis and Antiseismic Research School of Civil Engineering National Technical University of Athens (NTUA), Greece, ISBN (set) 978-618-5827-01-4, ISBN (vol. II) 978-618-5827-00-7, pp. 4234–4248. http://dx.doi.org/10.7712/120123.10715.20669

14. Garbowski T., Cocchetti G., Cornaggia A., Ferrari R., Rizzi E. (2023) *Inverse analysis investigation by Gaussian processes optimisation of a historical concrete bridge relying on dynamic modal measurements*. In Proc. of **9th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2023)**, Athens, Greece, June 12–14, 2023, Eds. Papadrakakis M., Fragiadakis M., Institute of Structural Analysis and Antiseismic Research School of Civil Engineering National Technical University of Athens (NTUA), Greece, ISBN (set) 978-618-5827-01-4, ISBN (vol. II) 978-618-5827-00-7, pp. 4249–4264. http://dx.doi.org/10.7712/120123.10716.21212

15. Cornaggia A., Cocchetti G., Ferrari R., Rizzi E. (2022) *A novel Linear Complementarity Problem implementation for elastic-plastic structural optimisation of cable-rib satellite antennas*. In Proc. of **GIMC SIMAI YOUNG 2022 Workshop**, Eds. (Local organizing committee) Morganti S., Tamellini L., Zanotti P., Pavia, Italy, 29-30 September, 2022, MS11 - Computational Methods for Nonlinear Solid Mechanics, Università di Pavia, p. 111.

16. Ferrari R., Cocchetti G., Rizzi E. (2021) *Enriched computational Limit Analysis implementation for large-scale 3D truss-frame structures*. In Proc. of **25th International Congress of Theoretical and Applied Mechanics (25th ICTAM), ICTAM Milano 2020+1**, Italy, August 22-27, 2021, International Union of Theoretical and Applied Mechanics (IUTAM), 2 pages.

17. Ravizza G., Ferrari R., Rizzi E, Dertimanis V., Chatzi E.N. (2020) *An integrated monitoring strategy for current condition assessment of historic bridges*. In Proc. of **XI International Conference on Structural Dynamics (EURODYN 2020)**, Online Conference (postponed), November 23-25, 2020, Eds. M. Papadrakakis, M. Fragiadakis, C. Papadimitriou, Conference Proceeding ID: E20148, 12 pages.

18. Ravizza G., Ferrari R., Rizzi E, Dertimanis V., Chatzi E.N. (2019) *Denoising corrupted structural vibration response: critical comparison and assessment of related methods*. In Proc. of **7th Int. Conf. on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2019)**, Hersonissos, Crete Island, Greece, June 24-26, 2019, Eds. M. Papadrakakis, M. Fragiadakis, Institute of Structural Analysis and Antiseismic Research, National Technical University of Athens (NTUA), Conference Proceeding ID: 19291, Category: RS02–ALGORITHMS FOR STRUCTURAL HEALTH MONITORING, 12 pages.

https://2019.compdyn.org/proceedings/pdf/19291.pdf.

19. Ferrari R., Cocchetti G., Rizzi E. (2018) *New computational algorithms for the Limit Analysis of large-scale 3D truss-frame structures*. In Proc. of **9th Int. Conf. on Computational Methods (ICCM2018)**, Rome, Italy, 6th-10th August 2018, Eds. G.R. Liu, Patrizia Trovalusci, ScienTech Publisher LLC, USA, ISSN: 2374-3948 (online), Paper ID 3387, pp. 506–517. https://www.sci-en-tech.com/ICCM2018/PDFs/3387-11198-1-PB.pdf.

20. Ferrari R., Froio D., Chatzi E., Gentile C., Pioldi F., Rizzi E. (2015) *Experimental and numerical investigation for the structural characterization of a historic RC arch bridge*. In Proc. of **COMPDYN 2015, 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering**, Hersonissos, Crete Island, Greece, May 25-27, 2015, Eds. M. Papadrakakis, V. Papadopoulos, V. Plevris, Institute of Structural Analysis and Antiseismic Research, School of Civil Engineering, National Technical University of Athens (NTUA), ISBN: 978-960-99994-7-2, Vol. 1, pp. 2337–2353, doi:10.7712/120115.3542.1037.

21. Ferrari R., Pioldi F., Rizzi E., Gentile C., Chatzi E., Klis R., Serantoni E., Wieser A. (2015) *Heterogeneous sensor fusion for reducing uncertainty in Structural Health Monitoring*. In Proc. of **UNCECOMP 2015, 1st ECCOMAS Thematic Conference on International Conference on Uncertainty Quantification in Computational Sciences and Engineering**, Hersonissos, Crete Island, Greece, May 25-27, 2015, M. Papadrakakis, V. Papadopoulos, Ed. G. Stefanou, Institute of Structural Analysis and Antiseismic Research, School of Civil Engineering, National Technical University of Athens (NTUA), ISBN: 978-960-99994-9-6, pp. 511–528, doi:10.7712/120215.4289.821.

22. Pioldi F., Ferrari R., Rizzi E. (2014) *A refined FDD algorithm for Operational Modal Analysis of buildings under earthquake loading*. In Proc. of **26th International Conference on Noise and Vibration Engineering (ISMA2014)**, Belgium, September 15-17, 2014, Eds. P. Sas, D. Moens, H. Denayer, KU Leuven, Book of Abstracts, p. 152; CD-ROM Proceedings, ISBN: 9789073802919, Paper ID 593, pp. 3353–3368.

23. Ferrari R., Cocchetti G., Rizzi E. (2012) *Elastoplastic Structural Analysis of the Paderno d'Adda bridge (Italy, 1889) based on Limit Analysis*. In Proc. of **8th Int. Conf. on Structural Analysis of Historic Constructions (SAHC2012)**, Wroclaw, Poland, October 15-17, 2012, Ed. Jerzy Jasieńko, DWE, Wroclaw, Poland, ISSN: 0860-2395, ISBN: 978-83-7125-216-7, Vol. 3, pp. 2171–2180.

24. Ferrari R., Rizzi E. (2011) *FEM modelling of the Paderno d'Adda bridge (Italy, 1889)*. In Proc. of **Structural Engineers World Congress (SEWC 2011)**, Como, Italy, April 4-6, 2011; Book of Abstracts, p. 159; CD-ROM Proceedings, Paper 210 (9 pages).

25. Ferrari R., Facheris M., Rizzi E. (2010) *Structural Analysis of the Paderno d'Adda Bridge (Italy, 1889)*. In Proc. of **7th International Conference on Structural Analysis of Historic Constructions (SAHC10)**, Shanghai, China, October 6-8, 2010, Eds. Xianglin Gu and Xiaobin Song, Book Series: Advanced Materials Research (ISSN: 1662-8985), Trans Tech Publications, Switzerland, ISBN: 978-0-87849-239-8, Part 1, pp. 459–465, doi:10.4028/www.scientific.net/AMR.133-134.459.

26. Ferrari R., Facheris M., Rizzi E. (2010) *Structural modelling of the piers of the Paderno d'Adda Bridge (1889, Italy)*. In Proc. of **34th International Symposium on Bridge and Structural Engineering (IABSE 2010)**, Venice, Italy, September 22-24, 2010, ISBN: 978-3-85748-122-2; Book of abstracts, pp. 778–779; CD-ROM Proceedings, Paper A-634 (8 pages), doi:10.2749/222137810796063689.

27. Ferrari R., Rizzi E. (2008) *On the theory of the ellipse of elasticity as a natural discretisation method in the design of Paderno d'Adda Bridge (Italy)*. Chapter 66 in Structural Analysis of Historic Construction – Preserving Safety and Significance, in Proc. of **6th International Conference on Structural Analysis of Historic Construction (SAHC08)**, Bath, UK, July 2-4, 2008, D. D'Ayala and E. Fodde (Eds.), CRC Press, Taylor & Francis Group, London, print ISBN: 978-0-415-46872-5, pp. 583–591, eBook ISBN: 978-1-4398-2822-9, doi:10.1201/9781439828229.

- **Articles in Proceedings of National Conferences**

  1. Pastore T., Cabrini M., Lorenzi S., Rizzi E., Ferrari R., Spirolazzi G., Cioffi C., Lizzori E., Pisanelli G. (2019) *Fenomeni di corrosione delle infrastrutture metalliche di rilevanza storica – Corrosion phenomena of historical metallic infrastructures*. **Atti de La XIII edizione delle Giornate Nazionali sulla Corrosione e Protezione**, Ass. Italiana di Metallurgia (AIM), Palermo, Italy, July 3-5, 2019, Università degli Studi di Palermo, 4 pages.

- **Theses**

  1. Ferrari R. (2013) *An Elastoplastic Finite Element Formulation for the Structural Analysis of Truss Frames with Application to a Historical Iron Arch Bridge*. Doctoral Thesis in Mechatronics, Information Technology, New Technologies and Mathematical Methods, XXV Cycle (three-year doctoral program), SSD ICAR/08, University of Bergamo, Dalmine, Italy, Advisor Prof. E. Rizzi, Co-advisor Prof. G. Cocchetti, 15 April 2013, 135 pages.

  2. Ferrari R. (2009) *Analisi strutturale degli elementi portanti del ponte di Paderno d'Adda (Structural analysis of Paderno d'Adda bridge)*. Laurea Thesis (Second-Level Degree), Dept. of Design and Technologies, University of Bergamo, Italy, Advisor Prof. E. Rizzi, 24 September 2009, 108 pages.

  3. Ferrari R. (2006) *Sulla concezione strutturale ottocentesca del ponte in ferro di Paderno d'Adda secondo la teoria dell'ellisse d'elasticità (On structural conception of nineteenth-century Paderno d'Adda iron bridge according to the theory of the ellipse of elasticity)*. Laurea Thesis (First-Level Degree), Dept. of Design and Technologies, University of Bergamo, Italy, Advisor Prof. E. Rizzi, 21 December 2006, 228 pages.

- **Technical Reports**

  1. Ferrari R., Facheris M., Rizzi E. (2011) Analisi strutturale del ponte in ferro di Paderno d'Adda (1889) (Structural analysis of Paderno d'Adda iron bridge (1889)). Technical Report SdC2011/03, Dept. of Design and Technologies, University of Bergamo, http://www.unibg.it/pers/?egidio.Rizzi, I-24044 Dalmine (BG), Italy, ISBN: 978-88-905817-2-4, 97 pages, June 2011.