

MARCO BONOPERA

STUDIES & ACADEMIC POSITIONS

- June 2021 - ongoing: **Assistant Research Fellow at National Center for Research on Earthquake Engineering, Taiwan.** Office of General Director.
- October 2019 – May 2021: **Assistant Research Fellow at National Center for Research on Earthquake Engineering, Taiwan.** Bridge Engineering Division.
- October 2017 – September 2019: **Assistant Research Fellow at University of Ferrara, Italy.** Department of Engineering. Division of Structural Engineering.
- August 2016 – July 2017: **Assistant Research Fellow at National Center for Research on Earthquake Engineering, Taiwan.** Bridge Engineering Division.
- January 2012 - March 2016: **Ph.D. Student in Civil Engineering at University of Ferrara, Italy.** Division of Structural Engineering. Ph.D. Thesis: “Axial load identifications in space frame systems”.
- July 2015 - December 2015: **Research Assistant at National Taiwan University, Taiwan.** Department of Civil Engineering. Division of Structural Engineering.
- May 2014 - November 2014: **Ph.D. Visiting Student at National Center for Research on Earthquake Engineering, Taiwan.**
- October 2010: **Master Degree in Civil Engineering at Polytechnic University of Marche, Italy.** Master Thesis: “Composite materials and coatings for repair and protection of concrete structures: analysis and experimental study”.
- May 2010 - July 2010: **Master Thesis and Training at Cracow University of Technology, Poland.** Faculty of Civil Engineering. Master Thesis: “Composite materials and coatings for repair and protection of concrete structures: analysis and experimental study”. Erasmus Exchange Programme.
- October 2009 - July 2010: **Master Student at Cracow University of Technology, Poland.** Faculty of Civil Engineering. Erasmus Exchange Programme.
- October 2006: **Bachelor Degree in Civil Engineering at University of Bologna, Italy.**
- July 2002: **Surveyor High School at Istituto Tecnico per Geometri G.Genga, Pesaro, Italy.**

TEACHING

- 2014/2015: **Teaching Assistant** for the course of “Structural Engineering”, Master Degree in Civil Engineering at University of Ferrara, Italy.
- 2013/2014: **Teaching Assistant** for the course of “Structural Engineering”, Master Degree in Civil Engineering at University of Ferrara, Italy.
- 2012/2013: **Teaching Assistant** for the course of “Reinforced and Prestressed Concrete Constructions”, Master Degree in Civil Engineering at University of Ferrara, Italy.

HIGHER EDUCATION COURSES

2014/01: LabVIEW software course at the National Instruments Company - Padova, Italy.

FOREIGN LANGUAGES

Italian: Native.

English: Reading skills: Good. Writing skills: Good. Verbal skills: Good.

Spanish: Reading skills: Good. Writing skills: Good. Verbal skills: Good.

TECHNICAL SKILLS

Software: Office, Autocad, Matlab, Mathematica, Labview, Strand7 (FEA), ProSap (FEA), Atena (FEA).

HONORS & AWARDS

- 2015: “Summer Program in Taiwan Grant”, Ministry of Science and Technology (MoST) of Taiwan for European Ph.D. students.
- 2014: “Summer Program in Taiwan Grant”, Ministry of Science and Technology (MoST) of Taiwan for European Ph.D. students.
- 2014: “Tender for Young Researchers Abroad Grant”, University of Ferrara, Italy.

EDITORIAL BOARD MEMBERSHIPS

- **Journal of Modern Industry and Manufacturing (JMIM, ISSN: 2788-8096),** Innovation Forever Publishing Group Limited.

- **Journal of Civil, Construction and Environmental Engineering** (JCCEE, E-ISSN: 2637-3890), Science Publishing Group, USA.

CONFERENCES, WORKSHOPS & MINI-SYMPOSIA

- **2021/11:** Minisymposium Organizer, Advances and Challenges in Structural Dynamics and Earthquake Engineering. The 45th National Conference on Theoretical and Applied Mechanics (CTAM 2021), New Taipei City, Taiwan.
- **2019:** Member of the International Technical Program Committee. The 2nd International Workshop on Materials Science and Mechanical Engineering (IWMSME 2018). IOP Publishing. IOP Conf. Series: Materials Science and Engineering 504 (2019) 011002. Scopus indexation. doi:10.1088/1757-899X/504/1/011002.
- **2016/10:** Minisymposium Co-organizer, Advances in Structural Control and Health Monitoring of Civil Constructions. The 2nd Computational Mechanics Conference in Taiwan (ACMT).

CONFERENCES & WORKSHOPS as INVITED SPEAKER

- Infrastructure and Civil Engineering World Forum (CivilEnggInfra-2022), Barcelona, Spain, March 21-23, 2022.

SEMINARS as INVITED SPEAKER

- **M. Bonopera.** Approaches for structural control and health monitoring of civil structures. Department of Civil Engineering, National Taiwan University, February 23, 2017, Taipei, Taiwan.
- **M. Bonopera.** Axial load identifications in steel space structures using second-order deflection-based methods. Department of Civil Engineering, National Chia Tung University, November, 2017, Hsinchu City, Taiwan.

PEER-REVIEWED JOURNAL PUBLICATIONS

1. A. Kozak, **M. Bonopera.** Performance analysis of Reinforced Polymer Cement Mortars “RPCMs” used for repairing concrete structures. *Czasopismo Techniczne* 1 (2015).
2. **M. Bonopera**, K.C. Chang, C.C. Chen, T.K. Lin, N. Tullini. Compressive column load identification in steel space frames using second-order deflection-based methods. *International Journal of Structural Stability and Dynamics* 18 (7) (2018) art. ID 1850092.
3. **M. Bonopera**, K.C. Chang, C.C. Chen, Z.K. Lee, N. Tullini. Axial load detection in compressed steel beams using FBG-DSM sensors. *Smart Structures and Systems* 21 (1) (2018) 53–64.
4. **M. Bonopera**, K.C. Chang, C.C. Chen, Y.C. Sung, N. Tullini. Feasibility study of prestress force prediction for concrete beams using second-order deflections. *International Journal of Structural Stability and Dynamics* 18 (10) (2018) art. ID 1850124.
5. **M. Bonopera**, K.C. Chang, C.C. Chen, Y.C. Sung, N. Tullini. Prestress force effect on fundamental frequency and deflection shape of PCI beams. *Structural Engineering and Mechanics* 67 (3) (2018) 255–265.
6. **M. Bonopera**, K.C. Chang, C.C. Chen, T.K. Lin, N. Tullini. Bending tests for the structural safety assessment of space truss members. *International Journal of Space Structures* 33 (3–4) (2018) 138–149.
7. **M. Bonopera**, K.C. Chang, C.C. Chen, Y.C. Sung, N. Tullini. Experimental study on the fundamental frequency of prestressed concrete bridge beams with parabolic unbonded tendons. *Journal of Sound and Vibration* 455 (2019) 150–160.
8. **M. Bonopera**, K.C. Chang, C.C. Chen, Z.K. Lee, Y.C. Sung, N. Tullini. Fiber Bragg grating-differential settlement measurement system for bridge displacement monitoring: Case study. *Journal of Bridge Engineering*, ASCE 24 (10) (2019) 1–12, art. ID 05019011.
9. **M. Bonopera**, K.C. Chang, Z.K. Lee. State-of-the-art review on determining prestress losses in prestressed concrete girders. *Applied Sciences (Switzerland)* 10 (20) (2020) art. ID 7257.
10. **M. Bonopera**, K.C. Chang, T.K. Lin, N. Tullini. Influence of prestressing on the behavior of uncracked concrete beams with a parabolic bonded tendon. *Structural Engineering and Mechanics* 77 (1) (2021) 1–17.
11. **M. Bonopera**, K.C. Chang, Y.C. Ou. Overview on the prestress loss evaluation in concrete beams. The 10th International Conference on Bridge Maintenance, Safety and Management, IABMAS 2020, Sapporo, Hokkaido, Japan (2021).
12. **M. Bonopera**, K.C. Chang. Elastic modulus of prestressed and reinforced concrete beams in Taiwan under dynamic flexural loading. *Journal of the Chinese Institute of Civil and Hydraulic Engineering* 33 (2) (2021) 83–92.
13. **M. Bonopera**, K.C. Chang. Novel method for identifying residual prestress force in simply supported concrete girder-bridges. *Advances in Structural Engineering* (2021). *Published online.*
14. **M. Bonopera**, W.C. Liao, W. Perceka. Experimental-theoretical investigation of the short-term vibration response of uncracked prestressed concrete members under long-age conditions. *Structures. In peer-review.*
15. **M. Bonopera**, C.C. Chou, C.C. Hsu. Long-term laboratory investigation for structural assessment of concrete cantilever bridges. The 11th International Conference on Bridge Maintenance, Safety and Management, IABMAS 2022, Barcelona, Spain (2022). *Accepted for publication.*
16. **M. Bonopera**, C.C. Chou, N. Tullini. Compression-softening effect in prestressed beams: Finite element-experimental investigation on thin-walled steel members post-tensioned by straight cables. *Journal of Engineering Mechanics*, ASCE. *In peer-review.*

17. W.T. Chang, **M. Bonopera**. Discrete element modeling of the behavior of granular flow in a storage steel silo under seismic loading. *In writing*.
18. Z.K. Lee, **M. Bonopera**. Two-year repaired earthquake-damaged bridge displacement monitoring using a fiber Bragg grating–differential settlement measurement liquid–level system. *In writing*.

CONFERENCE PUBLICATIONS

1. Peng Fan, **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen (2015). Axial load identification of a slender pre-stressed concrete beam. The 6th Conference of the Four Districts of Cross-Straits on Monitoring and Control in Civil Engineering, Xiamen, People’s Republic of China.
2. Chun-Chung Chen, Kuo-Chun Chang, Peng Fan, **Marco Bonopera**, Zheng-Kuan Lee, Nerio Tullini (2016). Applying the deflection measurement technology to identify the prestress force of beams. The 13th National Conference on Structural Engineering/The 3rd National Conference on Earthquake Engineering, Taoyuan, Taiwan.
3. **Marco Bonopera**, Nerio Tullini, Chun-Chung Chen, Tzu-Kang Lin, Kuo-Chun Chang (2015). Identification of the pre-stress force in bridge beams using their first natural frequency. The 1st Association of Computational Mechanics Taiwan (ACMT) Conference, Taipei, Taiwan.
4. **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen, Yu-Chi Sung, Nerio Tullini (2016). Prestress loss detection in concrete beams using fiber Bragg grating-differential settlement measurement technology. The 2nd Association of Computational Mechanics Taiwan Conference, Taipei, Taiwan.
5. Hsing-Chih Wei, **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen, Nerio Tullini (2016). Monitoring on prestress load in PCI beam-type bridge using non-destructive testing methods. The 29th KKHTCNN Symposium on Civil Engineering, Hong Kong, China.
6. Kuo-Chun Chang, Chun-Chung Chen, **Marco Bonopera**, Yu-Chi Sung, Hsing-Chih Wei, Peng Fan (2017). Feasibility study on prestress force identification in beams using deflected shape measurements. The 10th Taiwan Japan Workshop on Structural and Bridge Engineering, Kyoto, Japan.
7. **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen, Yu-Chi Sung, Wen-I Liao, Nerio Tullini (2017). Deflection-based measuring method for the prestress force prediction in concrete members. The 6th International Conference of Euro Asia Civil Engineering Forum (EACEF), Seoul, Korea.
8. **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen, Tzu-Kang Lin, Yu-Chi Sung, Nerio Tullini (2017). Second-order beam theory-based methods for the structural health monitoring of civil structures. The 3rd Association of Computational Mechanics Taiwan (ACTM) Conference, Tainan, Taiwan.
9. **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen, Yu-Chi Sung, Nerio Tullini (2017). Influence of prestress force on the fundamental frequency of concrete beams with straight unbonded tendons. The 30th KKHTCNN Symposium on Civil Engineering, Taipei, Taiwan.
10. B.H. Lee, C.C. Chen, **Marco Bonopera**, Y.C. Sung, K.C. Chang. Experimental study of loading combinations on modal parameters of pre-stressed concrete beams. The 2017 World Congress on Advances in Structural Engineering and Mechanics, ASEM17, Daejeon, Korea (2017).
11. **Marco Bonopera**, K.C. Chang, C.C. Chen, B.H. Lee, Y.C. Sung, N. Tullini. Integration of in lab experiments and numerical modeling in a short-term safety evaluation system for beam-type bridges. The 7th International Conference on Advances in Experimental Structural Engineering, Pavia, Italy (2017).
12. Kuo-Chun Chang, **Marco Bonopera**, Chun-Chung Chen, Yu-Chi Sung, Nerio Tullini (2018). Feasibility study of estimating PCI beam stiffness using free vibration testing. The 11th Taiwan-Japan Workshop on Structural and Bridge Engineering, Taipei, Taiwan.
13. **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen, Yu-Chi Sung (2018). Experimental study on the prestress force prediction in concrete beams with a parabolic tendon. The National Center for Research on Earthquake Engineering, Experimental Results in 2018, Taipei, Taiwan, July 16.
14. **Marco Bonopera**, Kuo-Chun Chang, Zheng-Kuan Lee, Yu-Chi Sung, Nerio Tullini (2018). Bridge displacement monitoring based on fiber Bragg grating-differential settlement measurement sensors. The 42nd National Conference on Theoretical and Applied Mechanics, Taipei, Taiwan, November 23-24.
15. Ahmed Saddek, **Marco Bonopera**, Tzu-Kang Lin, Yu-Quiang Lin (2018). Prestress force prediction in concrete bridge beams with a parabolic tendon using compression-softening theory. The 42nd National Conference on Theoretical and Applied Mechanics, Taipei, Taiwan, November 23-24.
16. **Marco Bonopera**, Kuo-Chun Chang, Nerio Tullini (2019). Bending tests to estimate the axial force in steel bridge members. The 12th Taiwan-Japan Workshop on Structural and Bridge Engineering, Kyoto, Japan, April 2-3.
17. **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen (2019). Review on prestress loss evaluation in concrete beams. The International Conference in Commemoration of 20th Anniversary of the 1999 Chi-Chi Earthquake, Taipei, Taiwan, September 15-19.
18. W.T. Chang, **Marco Bonopera**. Preliminary study of internal impact on metal silo for granular solids under seismic loading. The 16th East Asia-Pacific Conference on Structural Engineering & Construction, EASEC16, Queensland, Australia (2019).
19. **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen, Zheng-Kuan Lee (2019). An investigation into the “compression-softening” effect in post-tensioned steel beams. The Asian Pacific Congress on Computational Mechanics (APCOM 2019), Taipei, Taiwan, Dec 18-20.
20. Zheng-Kuan Lee, **Marco Bonopera**, Chia-Chuan Hsu, Shyh-Bin Chiou (2020). Health monitoring on a repaired earthquake damaged bridge by optic fiber differential settlement sensors. The Fifteenth National

- Conference on Structural Engineering/The Fifth National Conference on Earthquake Engineering, Tainan, Taiwan, Sep 2-4.
21. **Marco Bonopera**, Kuo-Chun Chang, Chun-Chung Chen (2020). An investigation into the dynamic and static response of an uncracked prestressed concrete bridge member in Taiwan. The Fifteenth National Conference on Structural Engineering/The Fifth National Conference on Earthquake Engineering, Tainan, Taiwan, Sep 2-4.

TECHNICAL REPORTS

- **M. Bonopera**. Static methods for the axial load estimations in truss bridges. Technical reports of the National Center for Research on Earthquake Engineering (2021). NCREE-2021-011.
- **M. Bonopera**, K.C. Chang. 利用二階變位預測混凝土預應力之可行性 (Feasibility study of prestress force estimation in concrete beams using second-order displacements). Technical reports of the National Center for Research on Earthquake Engineering (2021). NCREE-2021-009. In Chinese.

PATENTS/TECHNOLOGY TRANSFERS

- **2021**: Inventor: **M. Bonopera**. Co-inventors: K.C. Chang, C.C. Chou. **Method for identifying prestress force in single-span or multi-span PCI girder-bridges**. US Patent. Number: NCREP25US. Institution: National Applied Research Laboratories.
- **2021**: Inventor: **M. Bonopera**. Co-inventors: K.C. Chang, C.C. Chou. **Method for identifying prestress force in single-span or multi-span PCI girder-bridges**. Taiwan Patent. Institution: National Applied Research Laboratories. *In peer-review*.

REVIEWER for JOURNALS

- Advances in Science, Technology and Engineering Systems Journal
- Advances in Structural Engineering, SAGE
- Applied Mechanics, MDPI
- Applied Sciences, MDPI
- Buildings, MDPI
- Crystals, MDPI
- Environmental Science and Pollution Research, Springer
- Frontiers in Built Environment, Earthquake Engineering
- Indian Journal of Science and Technology
- International Review of Civil Engineering
- Journal of Modern Civil Engineering
- Journal of Structural Engineering, ASCE
- Materials, MDPI
- Structural Monitoring and Maintenance, Techno-Press

REVIEWER for CONFERENCES & WORKSHOPS

- The 2nd International Workshop on Materials Science and Mechanical Engineering (IWMSME 2018), Qingdao, Shandong Province, China, October 26-28, 2018. Scopus indexation.
- The 3rd International Workshop on Materials Science and Mechanical Engineering (IWMSME 2020), Hangzhou, China, April 18-20, 2020. Scopus indexation.
- IEEE - International Conference on Electrical, Computer and Energy Technologies (ICECET), Cape Town, South Africa, December 9-10, 2021. Scopus indexation.

M.S. GRADUATE STUDENTS

- **2019**: Hermawan Sutejo (Master Student, Civil Eng., National Taiwan University).
- **2018**: Ahmed Saddek (Master Student, Civil Eng., National Chiao Tung University).
- **2017**: Hsing-Chih Wei (Master Student, Civil Eng., National Taiwan University).
- **2016**: Peng Fan (Master Student, Civil Eng., National Taiwan University).

ACTIVITIES in RESEARCH PROJECTS

October 2020 - September 2022: Project head institution: 交通部公路總局第一區養護工程處. Project No.: 1091B1004_01. Project name: 台61線WH10A背背橋委託即時監測服務工作 (Real-Time Health-Monitoring of "Yun-An Bridge", Taiwan). Institution: National Center for Research on Earthquake Engineering. Co-investigator.

2021.10.25

Marco Bonopera, Ph.D.

