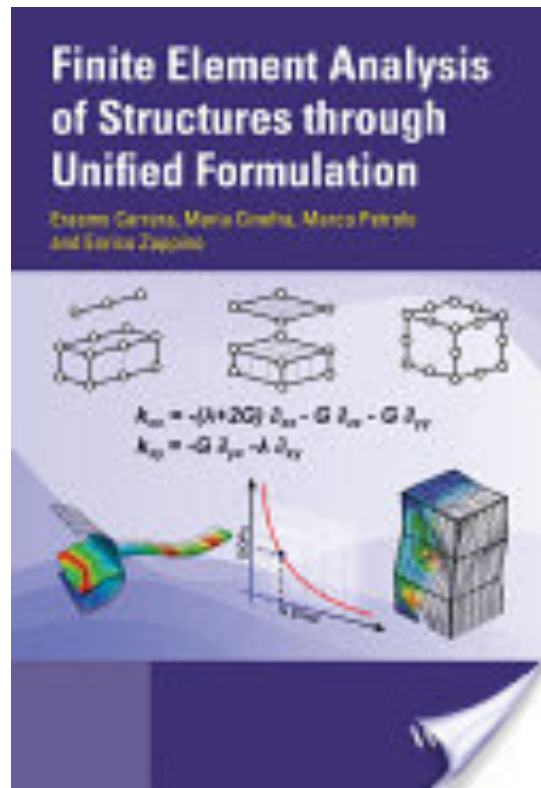




Professor Enrico Zappino



Erasmo Carrera, Maria Cinefra, Marco Petrolo and Enrico Zappino, Finite Element Analysis of Structures through Unified Formulation, John Wiley, 2014, 416 pages

See:

<http://www.mul2.polito.it/index.php/past-projects/19-people/present>

MUL2 Group, Mechanical and Aerospace Engineering Department
Politecnico di Torino, Italy

Research Interests, etc.:

Enrico Zappino is a post-doctoral fellow at the Politecnico di Torino. He has been in Professor Carrera's research group since 2010. His research activities concern structural analysis using classical and advanced models, multi-field analysis, and composite materials analysis. He is the coauthor of many works published in several international peer-reviewed journals. He obtained his PhD in April 2014, presenting a thesis on variable kinematic 1D, 2D, and 3D models for the analysis of aerospace structures. He also gained his BSc in Aerospace Engineering at the Politecnico di Torino in October 2007, presenting a thesis on advanced wing structures. He then obtained an MSc from the same university in July 2010, with a thesis on higher-order one-dimensional structural models applied to static, dynamic, and aeroelastic analysis. He was involved in many research programs supported by the European Space Agency and the European Union in cooperation with many European industrial and academic partners. From 2011, Dr. Zappino has worked as a teaching assistant at the Politecnico di Torino on the course of Aeroelasticity. In 2014, he was appointed as Adjunct Professor in Fundamentals of Strength of Materials at the Turin Polytechnic University in Tashkent, Uzbekistan.

Selected Publications:

Book:

Erasmo Carrera, Maria Cinefra, Marco Petrolo and Enrico Zappino, Finite Element Analysis of Structures through Unified Formulation, John Wiley, 2014, 416 pages

Journal Articles, etc.:

- E. Carrera, M. Filippi, E. Zappino, Refined beam elements with arbitrary cross-section geometries, *Comput. Struct.*, 88 (5–6) (2010), pp. 283–293
- E. Carrera, E. Zappino, G. Augello, A. Ferrarese, and M. Montabone, “Panel flutter analysis of curved panels for launchers applications,” in *Proceedings of the 7th European Symposium on Aerothermodynamics for Space Vehicles*, Paris, France, 2011.
- Petrolo, M., Zappino, E., Carrera, E.: Refined free vibration analysis of one-dimensional structures with compact and bridge-like cross-sections. *Thin-Walled Struct.* 56(7), 49–61 (2012)
- Carrera, E., Petrolo, M., Zappino, E., 2012. Performance of CUF approach to analyze the structural behavior of slender bodies. *Journal of Structural Engineering*, 138(2):285–297
- Ibrahim, S.M., Carrera, E., Petrolo, M., Zappino, E., 2012. Buckling of composite thin walled beams using refined theory. *Composite Structures*, 94(2):563–570
- Syed Muhammad Ibrahim, Erasmo Carrera, Marco Petrolo and Enrico Zappino, “Buckling of thin-walled beams by a refined theory”, *Journal of Zhejiang University-Science A (Applied Physics & Engineering)*, 2012 13(10):747–759
- E. Carrera, E. Zappino and M. Petrolo “Analysis of thin-walled structures with longitudinal and transversal stiffeners”, *J. Appl. Mech.* 2012;80(1):011006–011006–12. doi:10.1115/1.4006939. January 2013
- Carrera E, Filippi M, Zappino E. Laminated beam analysis by polynomial, trigonometric, exponential and zig-zag theories. *European Journal of Mechanics - A/Solids* 2013; 41, pp. 58–69.
- Carrera E, Filippi EM, Zappino E. Analysis of rotor dynamic by one-dimensional variable kinematic theories. *J Eng Gas Turbines Power* 2013;135(9):092501.
- Carrera E, Filippi M, Zappino E. Free vibration analysis of rotating composite blades via Carrera Unified Formulation. *Compos Struct* 2013;106:317–25.
- Carrera E, Cinefra M, Petrolo M, Zappino E (2014) Comparisons between 1D (beam) and 2D (plate/shell) finite elements to analyze thin walled structures. *Aerotecnica Missili & Spazio* 93(1–2):3–16
- E. Carrera, E. Zappino, K. Patočka et al., “Aeroelastic analysis of versatile thermal insulation (VTI) panels with pinched boundary conditions,” *CEAS Space Journal*, vol. 6, no. 1, pp. 23–35, 2014.
- Carrera E, Zappino E (2014) Aeroelastic analysis of pinched panels in supersonic flow changing with altitude. *J Spacecr Rockets* 51:187–199
- Carrera E, Filippi M, Zappino E. Free vibration analysis of laminated beam by polynomial, trigonometric, exponential and zig-zag theories. *Journal of Composite Materials*, Vol. 48, Issue 19, 2014, pp. 2299–2316
- E. Carrera, A. Pagani, M. Petrolo, E. Zappino, Recent developments on refined theories for beams with applications, *Mech Eng Rev*, 2 (2) (2015), pp. 1–30, 1400298
- E. Carrera, E. Zappino, T. Cavallo, “Accurate free vibration analysis of launcher structures using refined 1d models”, *Int J Aeronaut Space Sci*, 16 (2) (2015), pp. 206–222
- E. Zappino, T. Cavallo, E. Carrera, “Free vibration analysis of reinforced thin-walled plates and shells through various finite element models”, *Mech Adv Mater Struct*, 23 (9) (2015), pp. 1005–1018
- E. Carrera, E. Zappino, T. Cavallo, “Effect of solid mass consumption on the free-vibration analysis of launchers”, *J Spacecraft Rockets (AIAA)* (2016) [In press]
- E. Carrera, E. Zappino and T. Cavallo, “Static analysis of reinforced thin-walled plates and shells by means of finite element models”, *International Journal for Computational Methods in Engineering Science and Mechanics*, Vol. 17, No. 2, pp 106–126, 2016
- Erasmo Carrera and Enrico Zappino. "Carrera Unified Formulation for Free-Vibration Analysis of Aircraft Structures", *AIAA Journal*, Vol. 54, No. 1 (2016), pp. 280–292
- T. Cavallo, E. Zappino, E. Carrera, “Component-wise vibration analysis of stiffened plates accounting for stiffener modes”, *CEAS Aeronaut J* (2016) [in press]
- E. Zappino, G. Li, A. Pagani, and E. Carrera, “Global-local analysis of laminated plates by node-dependent kinematic finite elements with variable ESL/LW capabilities,” *Composite Structures*, vol. 172, pp. 1–14, 2017.
- E. Carrera and E. Zappino, “One-dimensional finite element formulation with node-dependent kinematics”, *Computers & Structures*, Vol. 192, pp 114–125, November 2017
- E. Zappino, A. Viglietti, and E. Carrera, The analysis of tapered structures using a component-wise approach based on refined one-dimensional models, *Aerosp. Sci. Technol.*, vol. 65, 141–156, 2017.

T. Cavallo, E. Zappino and E. Carrera, "Free-vibration analysis of space vehicle structures made by composite materials", *Composite Structures*, Vol. 183, pp 53-62, January 2018

A. Viglietti, E. Zappino and E. Carrera, "Free vibration analysis of locally damaged aerospace tapered composite structures using component-wise models", *Composite Structures*, Vol. 192 pp 38-51, May 2018

E. Zappino, A. Viglietti, and E. Carrera, "Analysis of tapered composite structures using a refined beam theory," *Composite Structures*, vol. 183, pp. 42–52, 2018

Enrico Zappino and Erasmo Carrera. "Multidimensional Model for the Stress Analysis of Reinforced Shell Structures", *AIAA Journal*, Vol. 56, No. 4 (2018), pp. 1647-1661.

T. Cavallo, A. Pagani, E. Zappino and E. Carrera, "Effect of localized damages on the free vibration analysis of civil structures by component-wise approach", *ASCE Journal of Structural Engineering*, Vol. 144, No. 8, August 2018

A. G. de Miguel, E. Carrera, A. Pagani, and E. Zappino. "Accurate Evaluation of Interlaminar Stresses in Composite Laminates via Mixed One-Dimensional Formulation", *AIAA Journal*, Vol. 56, No. 11 (2018), pp. 4582-4594.

G. Li, E. Carrera, M. Cinefra, A.G. de Miguel, and E. Zappino, "An adaptable refinement approach for shell finite element models based on node-dependent kinematics", *Composite Structures*, Vol. 210, pp 1-19, 15 February 2019

G. Li, A.G. de Miguel, A. Pagani, E. Zappino and E. Carrera, "Finite beam elements based on Legendre polynomial expansions and node-dependent kinematics for the global-local analysis of composite structures", *European Journal of Mechanics - A/Solids*, Vol. 74, pp 112-123, March-April 2019

A. Viglietti, E. Zappino, E. Carrera, "Analysis of variable angle tow composites structures using variable kinematic models", *Composites Part B: Engineering*, Vol. 171, pp 272-283, 15 August 2019

A. Viglietti, E. Zappino, E. Carrera, "Free vibration analysis of variable angle-tow composite wing structures", *Aerospace Science and Technology*, Vol. 92, pp 114-125, September 2019

F. Moleiro, E. Carrera, E. Zappino, G. Li and M. Cinefra, "Layerwise mixed elements with node-dependent kinematics for global–local stress analysis of multilayered plates using high-order Legendre expansions", *Computer Methods in Applied Mechanics and Engineering*, Vol. 359, Article 112764, 1 February 2020