Curriculum Vitae

Personal information

Name: Roberto Belotti

Education since leaving school

- B.Sc. in Mathematics, 2009 (Università di Milano-Bicocca)
- M.Sc in Mathematics, 2012 (Università di Milano-Bicocca)
- Ph.D. in Mechatronics, 2017 (Università di Padova)

Professional experience

- 19/09/2020 – present. High-school teacher at Ministero dell'Istruzione e del Merito.
- 01/09/2017 – 31/08/2020. Research Fellow on a fixed-term contract (RTD-a) at the Libera Università di Bolzano-Bozen.
- 01/01/2017 – 31/08/2017. Postdoctoral researcher at the Università degli Studi di Padova

Experience in academic teaching

As a Lecturer

- Academic year 2017-18 (60 hours), 2018-19 (60 hours), 2019-20 (46 hours), 2020-21 (38 hours), 2021-22 (28 hours), 2022-23 (56 hours): Functional Mechanical Design for Energy Efficiency, Libera Università di Bolzano-Bozen, post-graduate level (Master's in Energy Engineering and Industrial Mechanical Engineering)
- Academic year 2019-20 (20 hours), 2021-22 (10 hours): Mechatronics and Process Automation, Libera Università di Bolzano-Bozen, undergraduate level (Bachelor's in Wood Engineering)

As a Teaching Assistant

- Academic year 2014-15 (50 hours) and 2015-16 (40 hours): Analisi Matematica I, Università degli Studi di Padova, undergraduate level (Bachelor's in Mechanic and mechatronic engineering and Engineering and management)

Memberships

- Member of IFToMM Italy

Publications

Chapters in books

[1] *R. Belotti*, R. Caracciolo, D. Richiedei, Concurrent active control and dynamic structural modification in the design and the optimization of vibrating systems, 2017. doi:10.1007/978-3-319-48375-7_51.

Conference papers

[2] *R. Belotti*, I. Palomba, D. Richiedei, A. Trevisani, A new method for Passive partial eigenstructure assignment in vibrating systems, in: 6th Int. Oper. Modal Anal. Conf. IOMAC 2015, 2015.

[3] R. Belotti, *I. Palomba*, D. Richiedei, A. Trevisani, Interior mode selection in the Craig Bampton reduction technique based on an energy approach, in: 6th Int. Oper. Modal Anal. Conf. IOMAC 2015, 2015.

[4] *R. Belotti*, D. Richiedei, Improving active eigenvector assignment through passive modifications, in: J. Phys. Conf. Ser., 2016.

doi:10.1088/1742-6596/744/1/012050.
[5] R. Belotti, G. Caneva, *I. Palomba*, D. Richiedei, A. Trevisani, Model updating in flexible-link multibody systems, in: J. Phys. Conf. Ser., 2016. doi:10.1088/1742-6596/744/1/012073.
[6] *R. Belotti*, D. Richiedei, A. Trevisani, Concurrent design of active control and structural modifications for eigenstructure assignment on a cantilever beam, in: Proc. ASME Des. Eng. Tech. Conf., 2017. doi:10.1115/DETC2017-67504.
[7] *R. Belotti*, K. von Ellenrieder, The effects of switching time on shared human-robot control, in: ASME 2018 Dyn. Syst. Control Conf. DSCC 2018, 2018. doi:10.1115/DSCC2018-9194.
[8] *K.D. Von Ellenrieder*, H.C. Henninger, R. Belotti, Homogeneity for shared control in the presence of disturbances, in: IFAC-PapersOnLine, 2019: pp. 235–240. doi:10.1016/j.ifacol.2019.11.680.
[9] *R. Belotti*, K.D. Von Ellenrieder, H.C. Henninger, A deadband-based method for user effort reduction in human-robot shared control, in: IFAC-PapersOnLine, 2019: pp. 519–524. doi:10.1016/j.ifacol.2019.11.728.
[10] R. Belotti, D. Richiedei, *I. Tamellin*, A novel approach for antiresonance assignment in undamped vibrating systems, 2019. doi:10.1007/978-3-030-00365-4_33.
[11] *K.N. Tahmasebi*, R. Belotti, R. Vidoni, K. Von Ellenrieder, Stability measures and criteria for autonomous mobile robotic platforms: Analysis, comparison and numerical evaluation, in: ASME Int. Mech. Eng. Congr. Expo. Proc., 2019. doi:10.1115/IMECE2019-10569.
[12] *M. Bietresato*, R. Belotti, K.D. von Ellenrieder, F. Mazzetto, A preliminary study of active stabilization for agricultural machines using a movable mass, in: ASME Int. Mech. Eng. Congr. Expo. Proc., 2019. doi:10.1115/IMECE2019-11507.
[13] R. Belotti, D. Richiedei, I. Tamellin, A. Trevisani, Inverse structural modification for improving the design of harmonic excitation forces in underactuated vibration generators, in: Proceedings of ISMA 2020 and USD 2020, 2020.

Journal articles in refereed academic journals

[14] *R. Belotti*, D. Richiedei, A. Trevisani, Optimal Design of Vibrating Systems Through Partial Eigenstructure Assignment, J. Mech. Des. Trans. ASME. 138 (2016). doi:10.1115/1.4033505.
[15] *R. Belotti*, D. Richiedei, Designing auxiliary systems for the inverse eigenstructure assignment in vibrating systems, Arch. Appl. Mech. 87 (2017) 171–182. doi:10.1007/s00419-016-1185-x.
[16] *R. Belotti*, D. Richiedei, Dynamic structural modification of vibrating systems oriented to eigenstructure assignment through active control: A concurrent approach, J. Sound Vib. 422 (2018) 358–372. doi:10.1016/j.jsv.2018.02.036.
[17] R. Belotti, R. Caracciolo, *I. Palomba*, D. Richiedei, A. Trevisani, An Updating Method for Finite Element Models of Flexible-Link Mechanisms Based on an Equivalent Rigid-Link System, Shock Vib. 2018 (2018) 1–14. doi:10.1155/2018/1797506.
[18] *R. Belotti*, H. Ouyang, D. Richiedei, A new method of passive modifications for partial frequency assignment of general structures, Mech. Syst. Signal Process. 99 (2018) 586–599. doi:10.1016/j.ymssp.2017.06.043.
[19] *R. Belotti*, D. Richiedei, Pole assignment in vibrating systems with time delay: An approach embedding an a-priori stability condition based on Linear Matrix Inequality, Mech. Syst. Signal Process. 137 (2020). doi:10.1016/j.ymssp.2019.106396.
[20] R. Belotti, D. Richiedei, *I. Tamellin*, Antiresonance assignment in point and cross receptances for undamped vibrating systems. J. Mech. Des. Trans. ASME. 142 (2020). doi:10.1115/1.4044329
[21] R. Belotti, D. Richiedei, *I. Tamellin*, A. Trevisani, Pole

assignment for active vibration control of linear vibrating systems through Linear Matrix Inequalities. Appl. Sci. 10 (2020). doi:10.3390/app10165494
[22] R. Belotti, D. Richiedei, *I. Tamellin*, A. Trevisani, Response optimization of underactuated vibration generators through dynamic structural modification and shaping of the excitation forces, Int. J. Adv. Manuf. Tech. 112 (2021). doi:10.1007/s00170-020-06083-2
[23] R. Belotti, *D. Richiedei*, A. Trevisani, Multi-domain optimization of the eigenstructure of controlled underactuated vibrating systems, Struct. Multidiscip. Optim. 63 (2021). doi:10.1007/s00158-020-02709-x
[24] R. Belotti, I. Palomba, E. Wehrle, R. Vidoni, An approximation-based design optimization approach to eigenfrequency assignment for flexible multibody systems, Appl. Sci. 11 (2021). doi: 10.3390/app112311558
[25] K.D. von Ellenrieder, S.C. Licht, R. Belotti, H.C. Henninger, Shared human–robot path following control of an unmanned ground vehicle, Mechatronics 83 (2022). doi: 10.1016/j.mechatronics.2022.102750

Language competence
Italian: first language
English: C1