

University Academic Curriculum Vitae

Personal information Dario Richiede

- Education since leaving school**
- April 2003, Master Degree in Industrial Engineering - Management Engineering, University of Padova. Mark: 110/110, cum laude
 - March 2008, PhD in Industrial Engineering, curricula Mechatronics Engineering, University of Padova.

- Present appointment**
- Dynamics of Mechanical Systems, Master in Industrial Mechanical Engineering, by the Free University of Bozen
 - 2nd semester AY 2023/2024
 - Teaching language: English
 - Lecturer of 38 hours (over 46)
 - The goal of the course is gaining knowledge of the fundamentals of mechanical vibrations, including the mathematical modeling of dynamical problems, and their application in design and analysis. Practical experience on mechanical vibrations in a laboratory environment are also included.

Professional experience

From / to	Job title	Academic Institution	Academic level	Responsibilities
1/1/2005-12/31/2007	PhD Student	Univ. of Padova	PhD Student	Research
1/1/2008-9/30/2008	Post doc. researcher	Univ. of Padova	Post doc. researcher	Research
10/1/2008-9/30/2014	Researcher	Univ. of Padova	Researcher	Research and teaching
10/1/2014-10/10/2021	Associate Prof.	Univ. of Padova	Associate Prof.	Research and teaching
10/11/2021-present	Full Prof.		Full Prof.	Research and teaching

- Recent experience in academic teaching**
- Main courses given in the last 5 years:
 - Control of mechanical systems (since AY 2010/2011, 9 ECTS, Master's Degree in Mechatronics Engineering, University of Padova, more details at www.didattica.unipd.it)
 - Mechatronics and Automation (since AY 2019/2020, 9 ECTS, Master's Degree in Management Engineering, University of Padova, more details at www.didattica.unipd.it)
 - Simulation of Multibody Systems (AYs 2019/2020, 2020/2021, 6 ECTS Bachelor's Degree in Mechanical Engineering, University of Padova, more details at www.didattica.unipd.it)
 - Mechanics of Machines (AY 2018/2019, 9 ECTS Bachelor's Degree in Mechanical Engineering, University of Padova, more details at www.didattica.unipd.it)
 - Dynamics of Mechanical Systems (Master's degree in Industrial Mechanical Engineering, 5 ECTS, Free University of Bozen, AYs 2021/2022, 2022/2023)
 - Supervision of 2 PhD candidates in the PhD School on "Mechatronics and Product Innovation Engineering" (2018-2020 Iacopo Tamellin; 2020-2022 Jason Bettega). Co-supervision of 1 PhD candidate in the PhD School on "Mechatronics and Product

Innovation Engineering” (2021-2023 Giulio Piva).

Other academic responsibilities

- Membership of various boards and committee by the University of Padova. List of the current main ones:
 - Board of the PhD School on "Mechatronics and Product Innovation Engineering"
 - Steering committee of the MS in Management Engineering
 - Steering committee of the MS in Mechatronics Engineering
 - Admission board of the MS in Food Engineering
 - "Research and scientific committee" of the Department of Management and Engineering.
 - "Internationalization committee" of the School of Engineering
 - Delegated of the Department of Management and Engineering by the ARQUS Alliance

Memberships

- Member of IFTOMM, the International Federation of Mechanics of Machines
- Member of the following editorial boards of international scientific journals
 - Mechanical Sciences (Copernicus)
 - Applied Sciences (MDPI)
 - Shock and Vibration (Hindawi)
 - Discover Mechanical Engineering (Springer)

Research and scholarships

- The research activity includes the following areas:
 - *Dynamics of machines and robots*
 - *Vibrational mechanics*
 - *Multibody system dynamics*
 - *Motion planning and control*
 - *Dynamics of mechatronics systems*
 - *Model-based design of mechatronics systems*
- The research is developed in collaboration with scholars of the following international universities, as corroborated by the list of publications
 - Univ. of La Coruna (E)
 - Univ. of Liverpool (GB)
 - Univ. of Salvador de Bahia (BR)
 - Federal Univ. of Rio Grande do Norte (BR)

Publications

*Bettega, J., Boschetti, G., Frade, B.R., González, F., Piva, G., Richiedei, D., Trevisani, A.

Numerical and experimental investigation on the synthesis of extended Kalman filters for cable-driven parallel robots modeled through DAEs

(2024) *Multibody System Dynamics*, 60 (2), pp. 161-190.

DOI: 10.1007/s11044-023-09941-5

*Bettega, J., Richiedei, D., Tamellin, I., Trevisani, A.

Model Inversion for Precise Path and Trajectory Tracking in an Underactuated, Non-Minimum Phase, Spatial Overhead Crane (2023) *Journal of Vibration Engineering and Technologies*, 11 (8), pp. 3841-3857.

DOI: 10.1007/s42417-022-00786-4

*Bettega, J., Richiedei, D., Tamellin, I., Trevisani, A.

Integrated Inverse Dynamics and Optimized Mechanical Design in Underactuated Linear Vibratory Feeders Under Periodic Excitation

(2023) *Journal of Vibration Engineering and Technologies*, 11 (6), pp. 2531-2546.

DOI: 10.1007/s42417-023-00950-4

**Boscariol, P., Richiedei, D.*

Robust transient oscillation reduction for rest-to-rest motion of underactuated multibody systems

(2023) *Multibody System Dynamics*, 58 (2), pp. 157-179.

DOI: 10.1007/s11044-023-09892-x

**Bettega, J., Piva, G., Richiedei, D., Trevisani, A.*

Model predictive control for path tracking in cable driven parallel robots with flexible cables: collocated vs. noncollocated control

(2023) *Multibody System Dynamics*, 58 (1), pp. 47-81.

DOI: 10.1007/s11044-023-09881-0

Bettega, J., Boschetti, G., Piva, G., Richiedei, D., Trevisani, A.

Reconfiguration strategy for fully actuated translational cable-suspended parallel robots

(2023) *Frontiers in Robotics and AI*, 10, art. no. 1112856, .

DOI: 10.3389/frobt.2023.1112856

**Bettega, J., Richiedei, D.*

Trajectory tracking in an underactuated, non-minimum phase two-link multibody system through model predictive control with embedded reference dynamics

(2023) *Mechanism and Machine Theory*, 180, art. no. 105165, .

DOI: 10.1016/j.mechmachtheory.2022.105165

**Boscariol, P., Richiedei, D.*

Revisiting the inertia matching condition for energy efficiency

(2023) *Mechanics Based Design of Structures and Machines*, .

DOI 10.1080/15397734.2023.2299312

Bettega, J., Richiedei, D., Tamellin, I., Trevisani, A.

Motion Planning Through Model Inversion for a Gantry Crane Moving a Double Pendulum

(2023) *Mechanisms and Machine Science*, 135 MMS, pp. 375-382.

DOI: 10.1007/978-3-031-32606-6_44

Boscariol, P., Richiedei, D., Tamellin, I., Trevisani, A.

Machine-Learning Based Energy Estimation on a High-Speed Transportation System

(2023) *Mechanisms and Machine Science*, 134 MMS, pp. 290-297.

DOI: 10.1007/978-3-031-32439-0_33

Bettega, J., Richiedei, D., Tamellin, I., Trevisani, A.

Reducing Energy Consumption and Driving Torque in an Underactuated Robotic Arm Through Natural Motion

(2023) *Mechanisms and Machine Science*, 134 MMS, pp. 89-96.

DOI: 10.1007/978-3-031-32439-0_11

Richiedei, D., Tamellin, I., Trevisani, A.

Integrated Force Shaping and Optimized Mechanical Design in Underactuated Linear Vibratory Feeders

(2023) *Mechanisms and Machine Science*, 125 MMS, pp. 249-258.

DOI: 10.1007/978-3-031-15758-5_24

Bettega, J., Richiedei, D., Trevisani, A.

Feedforward Control of a Nonlinear Underactuated Multibody System

(2023) *Mechanisms and Machine Science*, 125 MMS, pp. 474-482.

DOI: 10.1007/978-3-031-15758-5_48

*Tamellin, I., Richiedei, D., Rodríguez, B., González, F.
Eigenstructure assignment and compensation of explicit co-
simulation problems
(2022) Mechanism and Machine Theory, 176, art. no. 105004, .
DOI: 10.1016/j.mechmachtheory.2022.105004

*Bettega, J., Richiedei, D., Trevisani, A.
Using Pose-Dependent Model Predictive Control for Path
Tracking with Bounded Tensions in a 3-DOF Spatial Cable
Suspended Parallel Robot
(2022) Machines, 10 (6), art. no. 453, .
DOI: 10.3390/machines10060453

*Richiedei, D., Tamellin, I., Trevisani, A.
Pole-zero assignment by the receptance method: multi-input
active vibration control
(2022) Mechanical Systems and Signal Processing, 172, art. no.
108976, .
DOI: 10.1016/j.ymsp.2022.108976

*Boscariol, P., Richiedei, D., Tamellin, I.
Residual vibration suppression in uncertain systems: A robust
structural modification approach to trajectory planning
(2022) Robotics and Computer-Integrated Manufacturing, 74,
art. no. 102282, .
DOI: 10.1016/j.rcim.2021.102282

*Richiedei, D.
Adaptive shaper-based filters for fast dynamic filtering of load
cell measurements
(2022) Mechanical Systems and Signal Processing, 167, art. no.
108541, .
DOI: 10.1016/j.ymsp.2021.108541

*Boscariol, P., Richiedei, D.
Energy optimal design of servo-actuated systems: A concurrent
approach based on scaling rules
(2022) Renewable and Sustainable Energy Reviews, 156, art.
no. 111923, .
DOI: 10.1016/j.rser.2021.111923

*Richiedei, D., Tamellin, I., Trevisani, A.
Unit-rank output feedback control for antiresonance assignment
in lightweight systems
(2022) Mechanical Systems and Signal Processing, 164, art. no.
108250, .
DOI: 10.1016/j.ymsp.2021.108250

Boscariol, P., Richiedei, D., Trevisani, A.
Eco Motion Planning for Mechatronic Systems
(2022) EcoMechatronics: Challenges for Evolution, Development
and Sustainability, pp. 251-269.
DOI: 10.1007/978-3-031-07555-1_15

Boscariol, P., Caracciolo, R., Richiedei, D.
Does Inertia Matching Imply Energy Efficiency?
(2022) Mechanisms and Machine Science, 108 MMS, pp. 282-
289.
DOI: 10.1007/978-3-030-87383-7_31

*Richiedei, D., Tamellin, I., Trevisani, A.
Beyond the Tuned Mass Damper: a Comparative Study of

Passive Approaches to Vibration Absorption Through Antiresonance Assignment
(2022) Archives of Computational Methods in Engineering, 29 (1), pp. 519-544.
DOI: 10.1007/s11831-021-09583-w

Araújo, J.M., Bettega, J., Dantas, N.J.B., Dórea, C.E.T., Richiedei, D., Tamellin, I.
Vibration control of a two-link flexible robot arm with time delay through the robust receptance method
(2021) Applied Sciences (Switzerland), 11 (21), art. no. 9907, .
DOI: 10.3390/app11219907

*Richiedei, D., Tamellin, I., Trevisani, A.
A homotopy transformation method for interval-based model updating of uncertain vibrating systems
(2021) Mechanism and Machine Theory, 160, art. no. 104288, .
DOI: 10.1016/j.mechmachtheory.2021.104288

Richiedei, D., Tamellin, I.
*Active control of linear vibrating systems for antiresonance assignment with regional pole placement
(2021) Journal of Sound and Vibration, 494, art. no. 115858, .
DOI: 10.1016/j.jsv.2020.115858

Richiedei, D., Tamellin, I.
Active approaches to vibration absorption through antiresonance assignment: A comparative study
(2021) Applied Sciences (Switzerland), 11 (3), art. no. 1091, pp. 1-35.
DOI: 10.3390/app11031091

Boscariol, P., Richiedei, D.
Desensitized motion planning for underactuated multibody systems
(2021) Proceedings of the ECCOMAS Thematic Conference on Multibody Dynamics, pp. 268-276.
DOI: 10.3311/ECCOMASMBD2021-168

Boschetti, G., González, F., Piva, G., Richiedei, D., Frade, B.R., Trevisani, A.
Synthesis of an Extended Kalman Filter for Cable-Driven Parallel Robots
(2021) Proceedings of the ECCOMAS Thematic Conference on Multibody Dynamics, pp. 277-288.
DOI: 10.3311/ECCOMASMBD2021-199

Bettega, J., Richiedei, D., Trevisani, A.
Path Tracking in Cable Suspended Parallel Robots through Position- Dependent Model Predictive Control with Embedded Integrator
(2021) Proceedings of the ECCOMAS Thematic Conference on Multibody Dynamics, pp. 289-298.
DOI: 10.3311/ECCOMASMBD2021-201

*Caracciolo, R., Richiedei, D., Tamellin, I.
Robust Assignment of Natural Frequencies and Antiresonances in Vibrating Systems through Dynamic Structural Modification
(2021) Shock and Vibration, 2021, art. no. 5593473, .
DOI: 10.1155/2021/5593473

*Belotti, R., Richiedei, D., Tamellin, I., Trevisani, A.
Response optimization of underactuated vibration generators through dynamic structural modification and shaping of the

excitation forces

(2021) International Journal of Advanced Manufacturing Technology, 112 (1-2), pp. 505-524.

DOI: 10.1007/s00170-020-06083-2

*Belotti, R., Richiedei, D., Trevisani, A.

Multi-domain optimization of the eigenstructure of controlled underactuated vibrating systems

(2021) Structural and Multidisciplinary Optimization, 63 (1), pp. 499-514.

DOI: 10.1007/s00158-020-02709-x

Boscariol, P., Caracciolo, R., Richiedei, D.

Energy Optimal Design of Jerk-Continuous Trajectories for Industrial Robots

(2021) Mechanisms and Machine Science, 91, pp. 318-325.

DOI: 10.1007/978-3-030-55807-9_36

*Richiedei, D., Tamellin, I., Trevisani, A.

Simultaneous assignment of resonances and antiresonances in vibrating systems through inverse dynamic structural modification

(2020) Journal of Sound and Vibration, 485, art. no. 115552, .

DOI: 10.1016/j.jsv.2020.115552

*Belotti, R., Richiedei, D., Tamellin, I., Trevisani, A.

Pole assignment for active vibration control of linear vibrating systems through Linear Matrix Inequalities

(2020) Applied Sciences (Switzerland), 10 (16), art. no. 5494, .

DOI: 10.3390/app10165494

Boscariol, P., Richiedei, D.

Optimization of motion planning and control for automatic machines, robots and multibody systems

(2020) Applied Sciences (Switzerland), 10 (14), art. no. 4982, .

DOI: 10.3390/app10144982

Boscariol, P., Caracciolo, R., Richiedei, D., Trevisani, A.

Energy optimization of functionally redundant robots through motion design

(2020) Applied Sciences (Switzerland), 10 (9), art. no. 3022, .

DOI: 10.3390/app10093022

*Belotti, R., Richiedei, D.

Pole assignment in vibrating systems with time delay: An approach embedding an a-priori stability condition based on Linear Matrix Inequality

(2020) Mechanical Systems and Signal Processing, 137, art. no. 106396, .

DOI: 10.1016/j.ymsp.2019.106396

*Belotti, R., Richiedei, D., Tamellin, I.

Antiresonance assignment in point and cross receptances for undamped vibrating systems

(2020) Journal of Mechanical Design, 142 (2), art. no. 022301-1, .

DOI: 10.1115/1.4044329

Belotti, R., Richiedei, D., Tamellin, I., Trevisani, A.

Inverse structural modification for improving the design of harmonic excitation forces in underactuated vibration generators

(2020) Proceedings of ISMA 2020 - International Conference on Noise and Vibration Engineering and USD 2020 - International Conference on Uncertainty in Structural Dynamics, pp. 1069-1079.

*Richiedei, D., Trevisani, A.
Optimization of the energy consumption through spring balancing of servo-actuated mechanisms
(2020) Journal of Mechanical Design, 142 (1), art. no. 012301, .
DOI: 10.1115/1.4043936

Richiedei, D., Trevisani, A.
Updating of Finite Element Models for Controlled Multibody Flexible Systems Through Modal Analysis
(2020) Computational Methods in Applied Sciences, 53, pp. 264-271.
DOI: 10.1007/978-3-030-23132-3_32

*Palomba, I., Richiedei, D., Trevisani, A., Sanjurjo, E., Luaces, A., Cuadrado, J.
Estimation of the digging and payload forces in excavators by means of state observers
(2019) Mechanical Systems and Signal Processing, 134, art. no. 106356, .
DOI: 10.1016/j.ymssp.2019.106356

Boscariol, P., Richiedei, D.
Energy-efficient design of multipoint trajectories for Cartesian robots
(2019) International Journal of Advanced Manufacturing Technology, 102 (5-8), pp. 1853-1870.
DOI: 10.1007/s00170-018-03234-4

Boscariol, P., Boschetti, G., Dalla Via, A., De Rossi, N., Neri, M., Palomba, I., Richiedei, D., Ronco, C., Trevisani, A.
Description and in-vitro test results of a new Wearable/Portable device for extracorporeal blood ultrafiltration
(2019) Machines, 7 (2), art. no. 37, .
DOI: 10.3390/machines7020037

Richiedei, D., Tamellin, I., Trevisani, A.
A general approach for antiresonance assignment in undamped vibrating systems exploiting auxiliary systems
(2019) Mechanisms and Machine Science, 73, pp. 4085-4094.
DOI: 10.1007/978-3-030-20131-9_407

Boscariol, P., Richiedei, D., Trevisani, A.
Robust model-based trajectory planning for flexible mechanisms: experimental assessment
(2019) Mechanisms and Machine Science, 73, pp. 4015-4024.
DOI: 10.1007/978-3-030-20131-9_400

Boscariol, P., Richiedei, D.
Trajectory design for energy savings in redundant robotic cells
(2019) Robotics, 8 (1), art. no. 15, .
DOI: 10.3390/robotics8010015

Boscariol, P., Boschetti, G., Via, A.D., De Rossi, N., Neri, M., Palomba, I., Richiedei, D., Ronco, C., Trevisani, A.
Rap: A new wearable/portable device for extracorporeal blood ultrafiltration
(2019) Mechanisms and Machine Science, 68, pp. 388-396.
DOI: 10.1007/978-3-030-03320-0_42

Boscariol, P., Richiedei, D.
A variational approach for the reduction of transient load sway in overhead cranes
(2019) Mechanisms and Machine Science, 68, pp. 449-456.

DOI: 10.1007/978-3-030-03320-0_49

Boscariol, P., Richiedei, D.
Energy saving in redundant robotic cells: Optimal trajectory planning
(2019) Mechanisms and Machine Science, 66, pp. 268-275.
DOI: 10.1007/978-3-030-00365-4_32

Belotti, R., Richiedei, D., Tamellin, I.
A novel approach for antiresonance assignment in undamped vibrating systems
(2019) Mechanisms and Machine Science, 66, pp. 276-283.
DOI: 10.1007/978-3-030-00365-4_33

*Richiedei, D.
Integrated selection of gearbox, gear ratio, and motor through scaling rules
(2018) Mechanics Based Design of Structures and Machines, 46 (6), pp. 712-729.
DOI: 10.1080/15397734.2018.1453366

Boscariol, P., Richiedei, D.
Spline-based energy-optimal trajectory planning for functionally redundant robots
(2018) 2018 14th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications, MESA 2018, art. no. 8449155, .
DOI: 10.1109/MESA.2018.8449155

*Belotti, R., Richiedei, D.
Dynamic structural modification of vibrating systems oriented to eigenstructure assignment through active control: A concurrent approach
(2018) Journal of Sound and Vibration, 422, pp. 358-372.
DOI: 10.1016/j.jsv.2018.02.036

*Boscariol, P., Richiedei, D.
Robust point-to-point trajectory planning for nonlinear underactuated systems: Theory and experimental assessment
(2018) Robotics and Computer-Integrated Manufacturing, 50, pp. 256-265.
DOI: 10.1016/j.rcim.2017.10.001

*Belotti, R., Ouyang, H., Richiedei, D.
A new method of passive modifications for partial frequency assignment of general structures
(2018) Mechanical Systems and Signal Processing, 99, pp. 586-599.
DOI: 10.1016/j.ymsp.2017.06.043

*Palomba, I., Richiedei, D., Trevisani, A.
Reduced-order observers for nonlinear state estimation in flexible multibody systems
(2018) Shock and Vibration, 2018, art. no. 6538737, .
DOI: 10.1155/2018/6538737

*Belotti, R., Caracciolo, R., Palomba, I., Richiedei, D., Trevisani, A.
An Updating Method for Finite Element Models of Flexible-Link Mechanisms Based on an Equivalent Rigid-Link System
(2018) Shock and Vibration, 2018, art. no. 1797506, .
DOI: 10.1155/2018/1797506

Caracciolo, R., Richiedei, D., Trevisani, A.

Deformation Control in Rest-to-Rest Motion of Mechanisms with Flexible Links

(2018) Shock and Vibration, 2018, art. no. 9016028, .

DOI: 10.1155/2018/9016028

*Richiedei, D., Trevisani, A.

Shaper-Based Filters for the compensation of the load cell response in dynamic mass measurement

(2018) Mechanical Systems and Signal Processing, 98, pp. 281-291.

DOI: 10.1016/j.ymssp.2017.04.049

*Fiorese, E., Richiedei, D., Bonollo, F.

Analytical computation and experimental assessment of the effect of the plunger speed on tensile properties in high-pressure die casting

(2017) International Journal of Advanced Manufacturing Technology, 91 (1-4), pp.

DOI: 10.1007/s00170-016-9758-y

*Palomba, I., Richiedei, D., Trevisani, A.

Kinematic state estimation for rigid-link multibody systems by means of nonlinear constraint equations

(2017) Multibody System Dynamics, 40 (1), pp. 1-22.

DOI: 10.1007/s11044-016-9515-x

*Richiedei, D., Trevisani, A.

Simultaneous active and passive control for eigenstructure assignment in lightly damped systems

(2017) Mechanical Systems and Signal Processing, 85, pp. 556-566.

DOI: 10.1016/j.ymssp.2016.08.046

Belotti, R., Richiedei, D.

Designing auxiliary systems for the inverse eigenstructure assignment in vibrating systems

(2017) Archive of Applied Mechanics, 87 (2), pp. 171-182.

DOI: 10.1007/s00419-016-1185-x

*Fiorese, E., Richiedei, D., Bonollo, F.

Improving the quality of die castings through optimal plunger motion planning: analytical computation and experimental validation

(2017) International Journal of Advanced Manufacturing Technology, 88 (5-8), pp. 1475-1484.

DOI: 10.1007/s00170-016-8875-y

Boscariol, P., Richiedei, D.

Robust rest-To-rest motion planning for cranes through a variational solution

(2017) Proceedings of the 8th ECCOMAS Thematic Conference on MULTIBODY DYNAMICS 2017, MBD 2017, 2017-January, pp. 559-566.

Boscariol, P., Boschetti, G., Caracciolo, R., Neri, M., Richiedei, D., Ronco, C., Trevisani, A.

Design optimization of a safety clamp for portable medical devices

(2017) International Journal of Mechanics and Control, 18 (2), pp. 33-40.

Palomba, I., Richiedei, D., Trevisani, A.

A reduction strategy at system level for flexiblelink multibody systems

(2017) International Journal of Mechanics and Control, 18 (2), pp. 59-68.

Belotti, R., Richiedei, D., Trevisani, A.
Concurrent design of active control and structural modifications for eigenstructure assignment on a cantilever beam
(2017) Proceedings of the ASME Design Engineering Technical Conference, 8, .
DOI: 10.1115/DETC2017-67504

Boscariol, P., Boschetti, G., Caracciolo, R., Neri, M., Richiedei, D., Ronco, C., Trevisani, A.
Design of a miniaturized safety clamping device for portable kidney replacement systems
(2017) Mechanisms and Machine Science, 47, pp. 79-87.
DOI: 10.1007/978-3-319-48375-7_9

Palomba, I., Richiedei, D., Trevisani, A.
A model reduction strategy for flexible-link multibody systems
(2017) Mechanisms and Machine Science, 47, pp. 183-191.
DOI: 10.1007/978-3-319-48375-7_20

Belotti, R., Caracciolo, R., Richiedei, D.
Concurrent active control and dynamic structural modification in the design and the optimization of vibrating systems
(2017) Mechanisms and Machine Science, 47, pp. 475-482.
DOI: 10.1007/978-3-319-48375-7_51

*Palomba, I., Richiedei, D., Trevisani, A.
Two-stage approach to state and force estimation in rigid-link multibody systems
(2017) Multibody System Dynamics, 39 (1-2), pp. 115-134.
DOI: 10.1007/s11044-016-9548-1

*Richiedei, D., Trevisani, A.
Analytical computation of the energy-efficient optimal planning in rest-to-rest motion of constant inertia systems
(2016) Mechatronics, 39, pp. 147-159.
DOI: 10.1016/j.mechatronics.2016.05.004

Belotti, R., Caneva, G., Palomba, I., Richiedei, D., Trevisani, A.
Model updating in flexible-link multibody systems
(2016) Journal of Physics: Conference Series, 744 (1), art. no. 012073, .
DOI: 10.1088/1742-6596/744/1/012073

Belotti, R., Richiedei, D.
Improving active eigenvector assignment through passive modifications
(2016) Journal of Physics: Conference Series, 744 (1), art. no. 012050, .
DOI: 10.1088/1742-6596/744/1/012050

Palomba, I., Richiedei, D., Trevisani, A.
Mode selection for reduced order modeling of mechanical systems excited at resonance
(2016) International Journal of Mechanical Sciences, 114, pp. 268-276.
DOI: 10.1016/j.ijmecsci.2016.05.026

*Belotti, R., Richiedei, D., Trevisani, A.
Optimal Design of Vibrating Systems Through Partial Eigenstructure Assignment
(2016) Journal of Mechanical Design, 138 (7), art. no. 071402, .

DOI: 10.1115/1.4033505

Fiorese, E., Richiedei, D., Bonollo, F.
Improved metamodels for the optimization of high-pressure die casting process
(2016) *Metallurgia Italiana*, 108 (6), pp. 21-24.

Caracciolo, R., Richiedei, D., Trevisani, A., Zanardo, G.
Designing vibratory linear feeders through an inverse dynamic structural modification approach
(2015) *International Journal of Advanced Manufacturing Technology*, 80 (9-12), pp. 1587-1599.
DOI: 10.1007/s00170-015-7096-0

Palomba, I., Richiedei, D., Trevisani, A.
Simultaneous estimation of kinematic state and unknown input forces in rigid-link multibody systems
(2015) *Proceedings of the ECCOMAS Thematic Conference on Multibody Dynamics 2015, Multibody Dynamics 2015*, pp. 229-240.

Palomba, I., Richiedei, D., Trevisani, A.
Energy-Based Optimal Ranking of the Interior Modes for Reduced-Order Models under Periodic Excitation
(2015) *Shock and Vibration*, 2015, art. no. 348106, .
DOI: 10.1155/2015/348106

Belotti, R., Palomba, I., Richiedei, D., Trevisani, A.
A new method for Passive partial eigenstructure assignment in vibrating systems
(2015) *6th International Operational Modal Analysis Conference, IOMAC 2015*, .

Belotti, R., Palomba, I., Richiedei, D., Trevisani, A.
Interior mode selection in the Craig Bampton reduction technique based on an energy approach
(2015) *6th International Operational Modal Analysis Conference, IOMAC 2015*, .

Boschetti, G., Caracciolo, R., Richiedei, D., Trevisani, A.
A Non-Time Based Controller for Load Swing Damping and Path-Tracking in Robotic Cranes
(2014) *Journal of Intelligent and Robotic Systems: Theory and Applications*, 76 (2), pp. 201-217.
DOI: 10.1007/s10846-014-0036-7

Caracciolo, R., Richiedei, D.
Optimal design of ball-screw driven servomechanisms through an integrated mechatronic approach
(2014) *Mechatronics*, 24 (7), pp. 819-832.
DOI: 10.1016/j.mechatronics.2014.01.004

Palomba, I., Richiedei, D., Trevisani, A.
A ranking method for the selection of the interior modes of reduced order resonant system models
(2014) *ASME 2014 12th Biennial Conference on Engineering Systems Design and Analysis, ESDA 2014*, 2, .
DOI: 10.1115/ESDA2014-20607

Palomba, I., Richiedei, D., Trevisani, A.
Energy-based interior mode selection for reduced-order models under harmonic excitation
(2014) *Proceedings of ISMA 2014 - International Conference on Noise and Vibration Engineering and USD 2014 - International Conference on Uncertainty in Structural Dynamics*, pp. 2577-2586.

Palomba, I., Richiedei, D., Trevisani, A.
Nonlinear kinematic state estimation in rigid-link multibody systems by spherical simplex sigma point unscented Kalman filters
(2014) Proceedings of ISMA 2014 - International Conference on Noise and Vibration Engineering and USD 2014 - International Conference on Uncertainty in Structural Dynamics, pp. 2899-2914.

*Boschetti, G., Caracciolo, R., Richiedei, D., Trevisani, A.
Moving the suspended load of an overhead crane along a pre-specified path: A non-time based approach
(2014) Robotics and Computer-Integrated Manufacturing, 30 (3), pp. 256-264.
DOI: 10.1016/j.rcim.2013.10.004

Richiedei, D., Trevisani, A.
Vibration confinement in lightly damped multibody systems: An hybrid active-passive approach
(2013) Proceedings of the ECCOMAS Thematic Conference on Multibody Dynamics 2013, pp. 789-795.

Boschetti, G., Caracciolo, R., Richiedei, D., Trevisani, A.
Non-Colocated path tracking in crane suspended loads
(2013) 2013 IEEE International Conference on Mechatronics, ICM 2013, art. no. 6519142, pp. 792-797.
DOI: 10.1109/ICMECH.2013.6519142

Boschetti, G., Caracciolo, R., Richiedei, D., Trevisani, A.
Multi-accelerometer-based method for environmental vibration compensation in load cell measurements
(2013) 2013 IEEE International Conference on Mechatronics, ICM 2013, art. no. 6518529, pp. 162-167.
DOI: 10.1109/ICMECH.2013.6518529

*Ouyang, H., Richiedei, D., Trevisani, A.
Pole assignment for control of flexible link mechanisms
(2013) Journal of Sound and Vibration, 332 (12), pp. 2884-2899.
DOI: 10.1016/j.jsv.2013.01.004

Afshar, R., Palomba, I., Richiedei, D., Trevisani, A.
Mode selection in reduced-order models for ultrasonic horns under longitudinal vibration
(2013) 5th International Operational Modal Analysis Conference, IOMAC 2013, pp. 1-10.

Pastorino, R., Richiedei, D., Cuadrado, J., Trevisani, A.
State estimation using multibody models and non-linear Kalman filters
(2013) International Journal of Non-Linear Mechanics, 53, pp. 83-90.
DOI: 10.1016/j.ijnonlinmec.2013.01.016

*Boschetti, G., Caracciolo, R., Richiedei, D., Trevisani, A.
Model-based dynamic compensation of load cell response in weighing machines affected by environmental vibrations
(2013) Mechanical Systems and Signal Processing, 34 (1-2), pp. 116-130.
DOI: 10.1016/j.ymsp.2012.07.010

*Richiedei, D.
Synchronous motion control of dual-cylinder electrohydraulic actuators through a non-time based scheme
(2012) Control Engineering and Applied Informatics, 14 (4), pp. 80-89.

*Ouyang, H., Richiedei, D., Trevisani, A., Zanardo, G.
 Discrete mass and stiffness modifications for the inverse eigenstructure assignment in vibrating systems: Theory and experimental validation
 (2012) International Journal of Mechanical Sciences, 64 (1), pp. 211-220.

DOI: 10.1016/j.ijmecsci.2012.06.015

*Ouyang, H., Richiedei, D., Trevisani, A., Zanardo, G.
 Eigenstructure assignment in undamped vibrating systems: A convex-constrained modification method based on receptances
 (2012) Mechanical Systems and Signal Processing, 27 (1), pp. 397-409.

DOI: 10.1016/j.ymsp.2011.09.010

Boschetti, G., Richiedei, D., Trevisani, A.
 Delayed reference control applied to flexible link mechanisms: A scheme for effective and stable control
 (2012) Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 134 (1), art. no. 011003, .

DOI: 10.1115/1.4005039

Boschetti, G., Richiedei, D., Trevisani, A.
 *Delayed reference control for multi-degree-of-freedom elastic systems: Theory and experimentation
 (2011) Control Engineering Practice, 19 (9), pp. 1044-1055.

DOI: 10.1016/j.conengprac.2011.05.006

Richiedei, D., Trevisani, A., Zanardo, G.
 *A constrained convex approach to modal design optimization of vibrating systems

(2011) Journal of Mechanical Design, 133 (6), art. no. 061011, .

DOI: 10.1115/1.4004221

Further data

Presentations in the following conferences in the last 3 years:

- 2023: ECCOMAS international conference on Multibody System Dynamics, Lisbon (P).
- 2023: RAAD international conference, Bled (SLO)
- 2021: ECCOMAS international conference on Multibody System Dynamics, Budapest (H) (online event).

More than 15 conferences in the previous years.

Statement of interest

My scientific and didactic experiences, since 2005, are focused on the dynamics of mechanical and mechatronics systems and have led to the development of several novel methodologies and innovative applications, that are widely recognized in the scientific community. This is also corroborated by the inclusion in 2023 in the list “World's Top 2% Scientists” edited by the Stanford University.

Language competence

	Writing	Speaking
Italian	Native	
English	C1	C1
German	B1	B1

Date

14th March, 2024