CARLO E.D. RIBOLDI, PhD

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Work Experience

ASSOCIATE PROFESSOR

Department of Aerospace Science and Technology, Politecnico di Milano, Milan, Italy – *since 2023,* ***current position***

- **Current research activities**
  - Design techniques for airships with unconventional mission and innovative propulsion
  - Dynamics simulation and configuration optimization techniques for unconventional airships
  - Dynamics and control of aircraft swarms & interacting airborne objects
  - Scalability issues for aircraft featuring innovative propulsion
  - Design, characterization (wind tunnel and field testing) and control of aircraft with distributed electric propulsion
  - Theoretical approach to the dynamics characterization and optimal design of airborne wind power plants
  - Comprehensive OOP library for co-simulation of interacting flying crafts (project SILCROAD, lead designer/programmer)
- ***Current projects***
  - FloFleet Airships – start-up – technical advisor – *launched 2021*
  - I-PROP (HORIZON-EIC) – 'Ionic propulsion in atmosphere' – investigator, WP leader – *project started 2023*
  - DIGACE *(*Italian Ministry of Research PRIN*) – 'Digital Approach to Certification'* – investigator, WP leader – *project started 2023*
- **Current teaching & Educational activities**
  - **Lecturer**, 1th year graduate course of **Airplane Performance and Dynamics** – *since 2020*
  - **Lecturer,** 2nd year graduate course of **Laboratory of Aircraft Design –** *since 2023*
  - **Lecturer**, 3rd year undergraduate course of **Flight Mechanics** – *since 2015*
  - **Board member** of the specializing master in **Fundamentals of the Air Transport System** (since established in 2018, **vice-director** since 2021, manager of internship activities within the master, communication and website)
  - **Board member** of the **Doctoral School in Aerospace Engineering** (since 2019)
  - **Delegate** of the Department of Aerospace Science and Technology within the board of ASDA – Association for the Scientific Development of ATM in Europe
  - Delegate of the Department of Aerospace Science and Technology within U-LTA – Upscaling Lighter-Than-Air Technology
  - **Manager** for the **experimental flight activities** for the course of Flight Mechanics
  - Master's and Ph.D. **thesis supervisor/tutor** for >35 students
  - **Ph.D. examiner and opponent**, national/foreign Universities
  - **Project advisor** for >5 international award-winning student's aircraft design

UNIVERSITY RESEARCHER

Department of Aerospace Science and Technology, Politecnico di Milano, Milan, Italy – *May 2008 – August 2023,* ***past position***

- **Research activities**
  - Design methodologies and tools for hybrid-electric aircraft
  - Integrated optimal design and mission planning of hybrid-electric aircraft
  - Aero-acoustic footprint prediction for aircraft with innovative propulsion
  - Analysis of infrastructure-level impact of hybrid-electric micro-feeder and mini-liner concepts
  - Optimal design of aircraft propellers
  - Optimal design of three-surface aircraft with deflectable forward surface
  - Design and implementation of rotorcraft simulation tools
  - Aero-elastic, multi-body simulation of rotorcraft
  - Model-based control laws for helicopters for noise footprint reduction
  - Observation of relative rotorcraft-wind orientation from rotor attitude
  - Design of sizing procedures for fixed-wing aircraft featuring a high share of novel technology
  - Multi-body simulation of internal combustion engines for aircraft application
  - Wind state observation through analysis of aero-elastic deformation of wind turbine rotors

- Design of optimal shut-down maneuvers for wind turbines
- Optimal tuning procedures of control laws for load mitigation for large wind turbines
- Design and implementation of controllers for smart trimming and load mitigation on wind turbine rotors
- LiDAR assisted predictive control for wind turbines
- Observation of wind turbine deformation and wind states
- Model-based controllers for load mitigation of wind turbines

▪ ***Projects***

- MANOEUVRES (EU Clean Sky) - 'Manoeuvering Noise Evaluation Using Validated Rotor State Estimation Systems' – investigator assistant – *2013-2015 (project concluded)*
- MAHEPA (EU H2020) – 'Modular Approach to Hybrid-Electric Propulsion Architecture' – investigator – *2017 – 2021 (project concluded)*
- UNIFIER19 (EU H2020) – 'Community-Friendly Mini-Liner' – investigator – *2019 – 2022 (project concluded)*
- SIENA (EU H2020) – 'Scalability Investigation of hybrid Electric concepts for Next-generation Aircraft' – investigator – *2021 – 2023 (project concluded)*
- Clean Sky Technology Evaluator – Business Jet Forecast Study – investigator – *2022 (project concluded)*

- **Teaching activities**
  - **Assistant Professor,**
    graduate course of **Aircraft Design** – *2013 - 2023*
    graduate course of **Design of Wind Turbines** – *2012 - 2015*
    undergraduate course of **Flight Mechanics** – *2011 - 2014*
    undergraduate course of **Introduction to Flight** – *2016*
- **Career track:**
  - **Tenure-track researcher** – *2017 - 2023, 6 yr.*
  - **Post-Doc Researcher** – *2012 - 2017, 6 yr.*
  - **Ph.D. Candidate** – *2009 - 2012, 3 yr.*
  - **Research Engineer** – *2008, 6 mth.*

Collaborations - Academic & Industrial

- InvolveSpace – *since 2023*
- FloFleet, Italy – *since 2021*
- Pipistrel d.o.o. Ajdovscina - *since 2017*
- Collins Aerospace (Formerly Raytheon Technology Research Center) – *since 2020*
- Technische Universiteit Delft, Delft, The Netherlands - *since 2017*
- Technische Universität München, Garching bei München, Germany - *since 2013*
- Leonardo-Helicopters (ex-Agusta-Westland), Cardano al Campo, Italia - *since 2013*
- IMT Engineering, Gorgonzola, Italia - *since 2012*
- Aalborg University, Aalborg, Denmark - *2010-2012*
- Clipper Wind Power, Inc., Santa Barbara, California - *2009-2013*
- National Renewable Energy Laboratory, Boulder, Colorado - *since 2008*
- Kangwon National University, Chooncheon, South Korea - *2008-2012*
- LeitWind AG, Bozen, Italia - *2007-2014*

Education

PHD, AEROSPACE ENGINEERING, with Merit – Politecnico di Milano, 2012

- Advanced control for horizontal-axis wind turbines and supporting enabling technologies –
  Advisor: prof. Carlo L. Bottasso

POST-GRADUATE MASTER, AIRPORT MANAGEMENT – Politecnico di Milano, 2009

- The situation of Malpensa airport in 2009: an analysis of the effects of politics on industries and commerce –
  Advisor: dott. Laura Tamborini

MASTER OF SCIENCE, AERONAUTICAL ENGINEERING, cum Laude – Politecnico di Milano, 2008

- Cyclic control of wind turbines - design and implementation –
  Advisor: prof. Carlo L. Bottasso

BACHELOR OF SCIENCE, AERONAUTICAL ENGINEERING, cum Laude – Politecnico di Milano, 2005

- Preliminary design of the combustion chamber of a military-purpose mixed-flow turbofan engine – Advisor: prof. Luciano Galfetti

Language Skills

ITALIAN, mother tongue

ENGLISH, fluent

- Extensive experience in teaching technical topics at university level
- Professional experience in Italian to English translation
- Lifelong field experience in communication with mother-tongue speakers
- Six-months individual course of spoken English, by InLingua Language School
- TOEFL certified

RUSSIAN, basic

- Four-months individual course of Russian with mother tongue teacher by InLingua Language School

Software & Programming Skills

- Matlab/Simulink
- C/C++
- Fortran 77/90
- HTML/CSS
- Google Analytics
- WordPress CMS
- Java TDK
- Compaq Visual Fortran
- Microsoft Visual Studio
- GNU GCC/G95
- Code::Blocks
- Microsoft Office
- Windows OS
- LaTeX/BibTeX
- Cp-Lambda
- FAST
- Femap
- Nastran
- Noesis Optimus
- Fusion 360

Professional Certifications & Grants

- Granted habilitation to the role of Full Professor (Italian Ministry of University and Research, 2023)
- Appointed court expert for aviation accident investigation (with fatalities), Tribunale di Milano, *2021*
- WP leader within EU-funded peer-reviewed projects
- Recipient of PRIN financial grant for research, Italian Ministry of Research (*2023*)
- Recipient of FFABR financial grant for research, Italian Ministry of Research (*2017*)
- Member of REPRISE – Panel of experienced scientists of the Italian Ministry of Research (*since 2018*) – Research area ING-IND03/Flight Mechanics
- Sustained Italian State Exam for Engineers, *Sept. 2008*

Prizes

- 2nd place "Royal Aeronautical Society International Light Aircraft Design Contest 2021-2022", Royal Aeronautical Society (RAeS). Project "Poli-eVerse Kairos", team supervisor, 14 Nov. 2022.
- Intellectual Property Award (IPA) 2021, Italian Ministry for the Development of Economy prize for excellent patents. Winner in category ‘Aerospace’. Patent: "HYBRIS: Structural Batteries for Electric Aircraft”, co-inventor.
- Best Post-Doc Paper Award ‘Giorgio Cavallini’, 2017, Italian Association of Aeronautics and Astronautics (AIDAA).
- 1st place at "RAeS E-Conditions Fixed-Wing Design Challenge 2015-2016", Royal Aeronautical Society (RAeS). Project "Hybris", team supervisor, 7 Nov. 2016.
- Best Master’s graduated student in Aeronautical Engineering at Politecnico di Milano, academic year 2006-07.

Dissemination Activities

BOOKS

- Giorgio Guglieri, Carlo E.D. Riboldi, "Introduction to Flight Dynamics", Celid, Torino, 2014, ISBN-13 9788867890422
- L. Sartori, S. Cacciola, A. Croce, C.E.D. Riboldi, "A research framework for the multi-disciplinary design and optimization of wind turbines", book chapter, in "Optimization of Wind Energy Conversion Systems", IntechOpen, London, 2020, ISBN-13 978-1-78984-407-8

JOURNAL PAPERS

- C.L. Bottasso, A. Croce, C.E.D. Riboldi, Y. Nam, "Power Curve Tracking in the Presence of a Tip Speed Constraint", Renewable Energy, Elsevier, Vol.40 N.1, 2012
- C.L. Bottasso, A. Croce, C.E.D. Riboldi, Y. Nam, "Multi-Layer Control Architecture for the Reduction of Deterministic and Non-Deterministic Loads on Wind Turbines", Renewable Energy, Elsevier, Vol. 51, 2013
- C.L Bottasso, C.E.D. Riboldi, "Estimation of Wind Misalignment and Vertical Shear from Blade Loads", Renewable Energy, Elsevier, Vol.62, February 2014
- C.L. Bottasso, P. Pizzinelli, C.E.D. Riboldi, L. Tasca "LiDAR-Enabled Model Predictive Control of Wind Turbines with Real-Time Capabilities", Renewable Energy, Elsevier, Vol.71, 2014
- C.L. Bottasso, A. Croce, C.E.D. Riboldi, "Optimal shutdown management", Journal of Physics: Conference Series, IOP Publishing, Vol. 524, 2014
- C.L. Bottasso, A. Croce, C.E.D. Riboldi, M. Salvetti, "Cyclic pitch control for the reduction of ultimate loads", Journal of Physics: Conference Series, IOP Publishing, Vol. 524, 2014
- C.L. Bottasso, C.E.D. Riboldi, "Validation of a Wind Misalignment Observer using Field Test Data", Renewable Energy, Elsevier, Vol.74, 2015
- L. Trainelli, M. Gennaretti, G. Bernardini, A. Rolando, C.E.D. Riboldi, M. Radaelli, L. Riviello, A. Scandroglio, "Innovative Helicopter In-Flight Noise Monitoring Systems Enabled by Rotor-State Measurements", Noise Mapping, De Gruyter, Vol.3, 2016
- C.L. Bottasso, A. Croce, F. Gualdoni, P. Montinari, C.E.D. Riboldi, "Articulated blade tip devices for load alleviation on wind turbines", Wind Energy Science, Copernicus Publications, June 2016
- C.E.D. Riboldi, "On the optimal tuning of individual pitch control for horizontal-axis wind turbines", Wind Engineering, SAGE UK, Vol.40, 2016
- C.E.D. Riboldi, F. Gualdoni, "An Integrated Approach to the Preliminary Weight Sizing of Small Electric Aircraft", Aerospace Science and Technology, Elsevier, August 2016
- Croce, F. Gualdoni, P. Montinari, C.E.D. Riboldi, C.L. Bottasso, "Inertial and aerodynamic tuning of passive devices for load alleviation on wind turbines", Journal of Physics: Conference Series, Vol. 753, 2016
- C.E.D. Riboldi, S. Cacciola, "Individual pitch control for 2-bladed wind turbines via multiblade multilag transformation", Wind Energy, Vol. 20, 2017
- S. Cacciola, C.E.D. Riboldi, "Equalizing aerodynamic blade loads through individual pitch control via multiblade multilag transformation", Journal of Solar Energy Engineering, Transactions of the ASME, Vol.139, 2017
- C.E.D. Riboldi, F. Gualdoni, L. Trainelli, "Preliminary weight sizing of light pure-electric and hybrid-electric aircraft", Transport Research Procedia, Vol. 29, 2018
- S. Cacciola, C.E.D. Riboldi, A. Croce, "Monitoring rotor aerodynamic and mass imbalances through a self-balancing control", Journal of Physics: Conference Series, Vol. 1037, 2018
- Croce, S. Cacciola, C.E.D. Riboldi, L. Sartori, "The Science of Making Torque from Wind (TORQUE 2018)", editorial, Journal of Physics: Conference Series, Vol. 1037, 2018
- C.E.D. Riboldi, "An optimal approach to the preliminary design of small hybrid-electric aircraft", Aerospace Science and Technology, Vol. 81, 2018
- C.E.D. Riboldi, "Energy-optimal off-design power management for hybrid-electric aircraft", Aerospace Science and Technology, Vol. 95, 2019
- C.E.D. Riboldi, L. Trainelli, F. Biondani, "Structural batteries in aviation: a preliminary sizing methodology", Journal of Aerospace Engineering, Vol. 33, 2020
- C.E.D. Riboldi, L. Trainelli, L. Mariani, A. Rolando, F. Salucci, "Predicting the effect of electric and hybrid-electric aviation on acoustic pollution", Noise Mapping, Vol. 7, 2020
- L. Trainelli, C.E.D. Riboldi, A. Rolando, F. Salucci, "Methodologies for the initial design studies of an innovative community-friendly miniliner", IOP Conference Series: Materials Science and Engineering, Vol. 1024, 2021
- L. Trainelli, F. Salucci, C.E.D. Riboldi, A. Rolando, F. Bigoni , "Optimal Sizing and Operation of Airport Infrastructures in Support of Electric-Powered Aviation", Aerospace, MDPI, Vol. 8, 2021

- S. Cacciola, C.E.D. Riboldi, “Three-Surface Model with Redundant Longitudinal Control: Modeling, Trim Optimization and Control in a Preliminary Design Perspective”, Aerospace, MDPI, Vol. 8, 2021
- F. Trevisi, A. Croce, C.E.D. Riboldi, “Flight Stability of Rigid Wing Airborne Wind Energy Systems”, Energies, MDPI, Vol. 14, 2021
- C.E.D. Riboldi, S. Cacciola, L. Ceffa, “Studying and optimizing the take-off performance of three-surface aircraft”, Aerospace, MDPI, Vol.9, 2022
- C.E.D. Riboldi, A. Rolando, G. Regazzoni, “On the feasibility of a launcher-deployable high-altitude airship: effects of design constraints in an optimal sizing framework”, Aerospace, MDPI, Vol.9, 2022
- C.E.D. Riboldi, A. Rolando, “Layout Analysis and Optimization of Airships with Thrust-Based Stability Augmentation”, Aerospace, MDPI, Vol.9, 2022
- Y.M. Khan, A. Rolando, F. Salucci, C.E.D. Riboldi, L. Trainelli, “Hybrid-electric and hydrogen powertrain modelling for airplane performance analysis and sizing”, IOP Conference Series: Materials Science and Engineering, Vol.1226, 2022
- F. Trevisi, I. Castro-Fernandez, G. Pasquinelli, C.E.D. Riboldi, A. Croce, “Flight trajectory optimization of Fly-Gen airborne wind energy systems through a harmonic balance method”, Wind Energy Science, Vol.7, 2022
- C.E.D. Riboldi, A. Rolando, “Thrust-based stabilization and guidance of airships without thrust-vectoring”, Aerospace, MDPI, Vol.10, 2023
- C.E.D. Riboldi, A. Rolando, D. Galbersanini, “Retrofitting of an ultra-light aircraft for unmanned flight and parachute cargo dropping: methods and case study”, Journal of Aerospace Engineering, Vol. 36(4), 2023
- F. Trevisi, C.E.D. Riboldi, A. Croce, “Vortex model of the aerodynamic wake of airborne wind energy systems”, Wind Energy Science, Vol.8, 2023
- S. Cacciola, C.E.D. Riboldi, E. Generali, “Optimization of Airplane Landing in Crosswind Conditions for Minimum Tire Wear”, Machines, MDPI, Vol.11, 2023
- F. Trevisi, C.E.D. Riboldi, A. Croce, “Refining the airborne wind energy system power equations with a vortex wake model”, Wind Energy Science, Vol.8, 2023
- F. Salucci, P. Parravicini, C.E.D. Riboldi, L. Trainelli, “An Observation Methodology for Non-Measurable Rotorcraft States”, Aerospace Science and Technology, Vol.141, 2023
- C.E.D. Riboldi, A. Rolando, “Autonomous Flight in Near-Hover and Hover for Thrust-Controlled Unmanned Airships”, Drones, Vol.7, 2023

CONFERENCE PAPERS

- C.L. Bottasso, A. Croce, C.E.D. Riboldi, G.S. Bir, “Real-Time Estimation of Structural and Wind States for Wind Turbine Advanced Control”, European Wind Energy Conference & Exhibition (EWEC 2009), Marseille, France, March 16-19, 2009
- C.L. Bottasso, A. Croce, C.E.D. Riboldi, “Computing Spatial Estimates of the Over-the-Rotor Wind Distribution for Advanced Wind Turbine Active Control”, 5th European and African Conference on Wind Engineering (EACWE 5), Firenze University Press, Firenze, 2009
- C.L. Bottasso, A. Croce, C.E.D. Riboldi, G.S. Bir, “Spatial Estimation of Wind States from the Aeroelastic Response of a Wind Turbine”, Torque 2010 -The Science of Making Torque from Wind, Heraklion, Crete, June 28-30, 2010
- C.L. Bottasso, C.E.D. Riboldi, “Higher-Harmonic Control of Wind Turbines”, European Wind Energy Conference & Exhibition 2011 (EWEC 2011), Curran Associates, Red Hook, NY, 2011
- C.L. Bottasso, P. Pizzinelli, C.E.D. Riboldi, “LiDAR-Enabled Predictive Control of Wind Turbines with Real-Time Capabilities”, Torque 2012 – The Science of Making Torque from Wind, Oldenburg, Germany, October 9-11, 2012
- C.L. Bottasso, C.E.D. Riboldi, “Observation of Wind Misalignment from Blade Loads”, The Science of Making Torque from Wind 2012, Oldenburg, Germany, October 9-11, 2012
- C.L. Bottasso, C.E.D. Riboldi, “LiDAR-Enabled Real-Time Control of Wind Turbines”, European Wind Energy Association Annual Event (EWEA 2013), Vienna, Austria, February 4-7, 2013
- C.L. Bottasso, C.E.D. Riboldi, “Wind Estimation by Blade Loads”, European Wind Energy Association Annual Event (EWEA 2013), Vienna, Austria, February 4-7, 2013
- C.L. Bottasso, C.E.D. Riboldi, “Improved Wind Direction Measurement through Blade Loads”, 69th American Helicopter Society International Annual Forum 2013, Curran Associates, Red Hook, NY, 2013
- L. Trainelli, A. Croce, C.E.D. Riboldi, R. Possamai, A. Castagnoli, “Multibody Modelling of a Novel Two-Bladed Helicopter: Trim Studies”, Multibody Dynamics 2015, CIMNE, Barcelona, 2015
- L. Trainelli, A. Croce, C.E.D. Riboldi, R. Possamai, “Dynamic Characterization of a Novel Gimbal Two-Blade Helicopter Rotor”, 71st American Helicopter Society International Annual Forum 2015, Curran Associates, Red Hook, NY, 2015
- L. Trainelli, C.E.D. Riboldi, M. Bucari, "Observing the Angle of Attack of the Tip Path Plane from Rotor Blade Measurements", 41st European Rotorcraft Forum (ERF2014), Munich, Germany, September 1-4, 2015
- Rolando, F. Rossi, C.E.D. Riboldi, L. Trainelli, R. Grassetti, D. Leonello, M. Redaelli, "The Pilot Acoustic Indicator: A Novel Cockpit Instrument for the Greener Helicopter Pilot", 41st European Rotorcraft Forum (ERF2014), Munich, Germany, September 1-4, 2015
- L. Trainelli, C.E.D. Riboldi, “Hybris – An Innovative Concept for Future General Aviation”, 13th Pegasus-AIAA Student Conference, Berlin,

Germany, April 5-7, 2017

- S. Cacciola, C.E.D. Riboldi, A. Croce, “A New Decentralized Pitch Control Scheme for Wind Turbines”, 20th World Congress of the International Federation of Automatic Control (IFAC 2017), Toulouse, France, July 9-14, 2017
- L. Trainelli, C.E.D. Riboldi, “Developing an Observation Methodology for Non-Measurable Rotorcraft States”, 43rd European Rotorcraft Forum (ERF 2017), Milan, Italy, September 12-15, 2017
- C.E.D. Riboldi, L. Trainelli, S. Cacciola, “A Model-Based Design Framework for Rotorcraft Trim Control Laws”, 43rd European Rotorcraft Forum (ERF 2017), Milan, Italy, September 12-15, 2017
- Croce, C.E.D. Riboldi, L. Trainelli, M. Amoozgar., “Basic Aeroelastic Stability Studies of Hingeless Rotor Blades in Hover Using Geometrically Exact Beam and Finite-State Inflow”, 43rd European Rotorcraft Forum (ERF 2017), Milan, Italy, September 12-15, 2017
- C.E.D. Riboldi, L. Trainelli, “Conceptual Design of a Structural-Battery Hybrid-Electric Aircraft”, 24th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2017), Palermo - Enna, Italy, September 18-22, 2017 – awarded Best Post-Doc Paper prize ‘Giorgio Cavallini’ 2017
- C.E.D. Riboldi, L. Trainelli, “Flynk - the Future All-Electric Commuter Concept for Metropolitan Areas”, 24th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2017), Palermo - Enna, Italy, September 18-22, 2017
- L. Trainelli, C.E.D. Riboldi, “Award-Winning Innovative Aircraft Design Projects at Politecnico di Milano”, Aerospace Europe CEAS 2017 Conference. European Aerospace "Quo Vadis?", Bucharest, Romania, October 16-20, 2017
- F. Bigoni, A. Moreno-Perez, F. Salucci, C.E.D. Riboldi, A. Rolando, L. Trainelli, “Design of Airport Infrastructures in Support of the Transition to a Hybrid-Electric Fleet”, Advanced Aircraft Efficiency in a Global Air Transport System Conference (AEGATS 2018), Toulouse, France, October 23-25, 2018
- C.E.D. Riboldi, “Weight-Optimal Design of Light Hybrid-Electric Aircraft”, Advanced Aircraft Efficiency in a Global Air Transport System Conference (AEGATS 2018), Toulouse, France, October 23-25, 2018
- C.E.D. Riboldi, L. Trainelli, F. Biondani, “A Sizing Procedure for Structural Batteries in Hybrid-Electric Aircraft”, Advanced Aircraft Efficiency in a Global Air Transport System Conference (AEGATS 2018), Toulouse, France, October 23-25, 2018
- L. Trainelli, A. Rolando, C.E.D. Riboldi, F.Salucci, “Evaluating The Impact Of Fleet Switching To Hybrid-Electric Aircraft On Airport Infrastructures”, MEA2019 - More Electric Aircraft, Toulouse, France, 6-7 Feb. 2019
- L. Trainelli, N. Rossi, F.Salucci, C.E.D. Riboldi, A. Rolando, “Preliminary Sizing and Energy Management of Serial Hybrid-Electric Airplanes”, 25th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2019), Rome, Italy, 9-12 Sep. 2019
- L. Trainelli, D. Comincini, F.Salucci, A. Rolando, C.E.D. Riboldi, “Sizing and Performance of Hydrogen-Driven Airplanes”, 25th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2019), Rome, Italy, 9-12 Sep. 2019
- C.E.D. Riboldi, F. Bigoni, F.Salucci, A. Rolando, L. Trainelli, “Switching to Electric Propulsion: Aero Club Fleet and Infrastructure Sizing”, 25th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2019), Rome, Italy, 9-12 Sep. 2019
- C.E.D. Riboldi, L. Mariani, L. Trainelli, A. Rolando, F. Salucci, “Assessing the effect of hybrid-electric power-trains on acoustic and chemical pollution”, Aerospace Europe Conference 2020 (AEC2020), Bordeaux, France, 25-28 Feb. 2020
- L. Trainelli, M. Bruglieri, C.E.D. Riboldi, F. Salucci, D. Gabrielli, “Optimal definition of a short haul air transportation network for door to door mobility”, Aerospace Europe Conference 2020 (AEC2020), Bordeaux, France, 25-28 Feb. 2020
- Rolando, F. Salucci, Y.M. Khan, L. Trainelli, C.E.D. Riboldi, “On the design of an electric-powered micro-feeder aircraft”, Aerospace Europe Conference 2020 (AEC2020), Bordeaux, France, 25-28 Feb. 2020
- F. Salucci, C.E.D. Riboldi, L. Trainelli, A. Rolando, “Optimal recharging infrastructure sizing and operations for a regional airport”, Aerospace Europe Conference 2020 (AEC2020), Bordeaux, France, 25-28 Feb. 2020
- L. Trainelli, C.E.D. Riboldi, F. Salucci, A. Rolando, “A general preliminary sizing procedure for pure-electric and hybrid-electric airplanes”, Aerospace Europe Conference 2020 (AEC2020), Bordeaux, France, 25-28 Feb. 2020
- L. Trainelli, C.E.D. Riboldi, A. Rolando, F. Salucci , “Methodologies for the initial design studies of an innovative community friendly miniliner”, 10th EASN International Conference 2020, Virtual event, 2-4 Sep. 2020
- F. Salucci , C.E.D. Riboldi, L. Trainelli, A. Rolando, L. Mariani, “A Noise Estimation Procedure for Electric and Hybrid-Electric Aircraft”, AIAA Scitech 2021 Forum, Virtual event, 11-15 & 19-21 Jan. 2021
- F. Salucci , L. Trainelli, M. Bruglieri, C.E.D. Riboldi, A. Rolando, G. Garcia Gonzalez, “Capturing the Demand for an Electric-Powered Short-Haul Air Transportation Network”, AIAA Scitech 2021 Forum, Virtual event, 11-15 & 19-21 Jan. 2021
- F. Salucci , L. Trainelli, C.E.D. Riboldi, A. Rolando, “Sizing of Airport Recharging Infrastructures in Support to a Hybrid-Electric Fleet”, AIAA Scitech 2021 Forum, Virtual event, 11-15 & 19-21 Jan. 2021
- F. Trevisi, C.E.D. Riboldi, A. Croce, “Sensitivity analysis of a Ground-Gen Airborne Wind Energy System design”, Torque 2022 – The Science of Making Torque from Wind, Delft, The Netherlands, June 1-3, 2022
- B. Aigner, A. Garcia Garriga, G. Sirtori, C.E.D. Riboldi, L. Trainelli, C. Mariani, M. Mancini, "Overview and preliminary results of the scalability investigation of hybrid electric concepts for next-generation aircraft (SIENA) project", 12th EASN International Conference", Barcelona, Spain, 18-21 Sep., 2022
- Y.M. Khan, A. Rolando, F. Salucci, C.E.D. Riboldi, L. Trainelli, "Hybrid-electric and hydrogen powertrain modelling for airplane performance analysis and sizing", 12th EASN International Conference", Barcelona, Spain, 18-21 Sep., 2022

- L. Trainelli, C.E.D. Riboldi, S. Cacciola, “Design, Implementation and Testing of a Distributed Electric Propulsion Demonstrator”, 34th Society of Flight Test Engineers European Chapter Symposium (SFTE-EC 2023), Rome, Italy, 16-18 May, 2023
- C.E.D. Riboldi, M. Tomasoni, “Dynamic Simulation, Flight Control and Guidance Synthesis for Fixed Wing UAV Swarms”, Aerospace Europe Conference 2023 (AEC2023), Lausanne, Switzerland, 10-13 Jul. 2023
- B. Aigner, E. Wehrle, W. Struiwig, G. Sirtori, C.E.D. Riboldi, L. Trainelli, “Consideration of Technology Scalability in the Design of Electric Propulsion System Architectures”, Aerospace Europe Conference 2023 (AEC2023), Lausanne, Switzerland, 10-13 Jul. 2023
- C.E.D. Riboldi, A. Rolando, S. Cacciola, G. Regazzoni, I. Spadafora, “On the Optimal Preliminary Design of High Altitude Airships: Automated Procedure and the Effect of Constraints”, Aerospace Europe Conference 2023 (AEC2023), Lausanne, Switzerland, 10-13 Jul. 2023
- C.E.D. Riboldi, A. Rolando, “Thrust-Based Flight Stabilization and Guidance for Autonomous Airships”, Aerospace Europe Conference 2023 (AEC2023), Lausanne, Switzerland, 10-13 Jul. 2023
- L. Trainelli, C.E.D. Riboldi, L. Caccetta, G. Sirtori, “A Preliminary Sizing Methodology for Hydrogen-Burning Jetliners”, 27th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2023), Padova, Italy, 4-9 Sep. 2023
- F. Trevisi, A. Croce, C.E.D. Riboldi, “Multidisciplinary design, analysis and optimization of fixed-wing airborne wind energy systems”, 27th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2023), Padova, Italy, 4-9 Sep. 2023

PHD THESIS

- Carlo E.D. Riboldi, “Advanced control laws for variable-speed wind turbines and supporting enabling technologies”, Politecnico di Milano, 2012. Link: https://www.politesi.polimi.it/handle/10589/56887

EDITORIAL ACTIVITIES

- Guest Editor, Aerospace, MDPI, Special Issue on “Mission Analysis and Design of Lighter-than-Air Flying Vehicles II”, 2023-24
- Guest Editor, Aerospace, MDPI, Special Issue on “Aircraft Modelling for Design, Simulation and Control II”, 2022-23
- Guest Editor, Aerospace, MDPI, Special Issue on “Mission Analysis and Design of Lighter-than-Air Flying Vehicles”, 2021-22
- Guest Editor, Aerospace, MDPI, Special Issue on “Aircraft Modelling for Design, Simulation and Control”, 2020-21

PATENTS

- Bernasconi, F. Biondani, L. Capoferri, A. Favier, C. Velarde Lopez De Ayala, F. Gualdoni, C.E.D. Riboldi, L. Trainelli, “Velivolo con batterie elettriche, in particolare velivolo ibrido”, Italian patent 102016000114808, 2016
- Bernasconi, F. Biondani, L. Capoferri, A. Favier, C. Velarde Lopez De Ayala, F. Gualdoni, C.E.D. Riboldi, L. Trainelli, “Aircraft with electric battery, in particular hybrid aircraft”, European patent PCT/EP2017/078728, 2017
- L. Alberti, D. Pasquali, A. Santeramo, M. Tombolini, C.E.D. Riboldi, L. Trainelli, “Velivolo plurimotore simulante un monomotore via hardware e software”, Italian patent 102020000010369, 2020
- L. Trainelli, C.E.D. Riboldi, L. Alberti, D. Pasquali, A. Santeramo, M. Tombolini, “Distributed Electric Propulsion Aircraft Simulating a Single Propeller Aircraft”, European patent PCT/EP2021/06217, 2021

CONFERENCES

- 5th European and African Conference on Wind Engineering (EACWE 5), Firenze, 2009
- Torque 2010 -The Science of Making Torque from Wind, Heraklion, Crete, June 28-30, 2010
- Torque 2012 – The Science of Making Torque from Wind, Oldenburg, Germany, October 9-11, 2012
- European Wind Energy Association Annual Event (EWEA 2013), Vienna, Austria, February 4-7, 2013
- 71st American Helicopter Society International Annual Forum 2015, Virginia Beach, VA, May 5-7, 2015
- 41st European Rotorcraft Forum (ERF2014), Munich, Germany, September 1-4, 2015
- 20th World Congress of the International Federation of Automatic Control (IFAC 2017), Toulouse, France, July 9-14, 2017
- 43rd European Rotorcraft Forum (ERF 2017), Milan, Italy, September 12-15, 2017
- 24th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2017), Palermo - Enna, Italy, September 18-22, 2017
- Aerospace Europe CEAS 2017 Conference. European Aerospace "Quo Vadis?", Bucharest, Romania, October 16-20, 2017
- Advanced Aircraft Efficiency in a Global Air Transport System Conference (AEGATS 2018), Toulouse, France, October 23-25, 2018
- MEA2019 - More Electric Aircraft, Toulouse, France, February 6-7, 2019
- 25th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2019), Rome, Italy, September 9-12, 2019
- Aerospace Europe Conference 2020 (AEC2020), Bordeaux, France, February 25-28, 2020
- 10th EASN International Conference, Virtual event, September 2-4, 2020

- AIAA Scitech 2021 Forum, Virtual event, January 11-15 & 19-21, 2021
- Torque 2022 - The Science of Making Torque from Wind, Delft, The Netherlands, June 1-3, 2022
- 9th international Airborne Wind Energy Conference (AWEC 2021), Milano, Italia, June 22-24, 2022
- 12th EASN International Conference, Barcelona, Spain, September 18-21, 2022
- 34th Society of Flight Test Engineers European Chapter Symposium (SFTE-EC 2023), Rome, Italy, 16-18 May, 2023
- Aerospace Europe Conference 2023 (AEC2023), Lausanne, Switzerland, July 10-13, 2023
- 27th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2023), Padova, Italy, September 4-7, 2023
- 13th EASN International Conference, Salerno, Italy, September 5-8, 2023

Licenses

- Driving license for cars, granted 2003
- Driving license for motorcycles (unlimited), granted 2021
- Private pilot license PPL(A)-VFR, granted 2013, current
- Advanced Ultralight pilot license, granted 2017, current

Other Professional Interests

ARCHITECTURE, URBEX PHOTOGRAPHY AND MILITARY HISTORY

- Urban exploration (URBEX) mission planning consultant, especially for Countries of the former Eastern bloc
- Action photography consultant in challenging scenarios
- Photography provider for historians, books and documentary productions (past collaboration with Talos Films, NY, past and ongoing collaboration with more than 5 private book authors)
- Landscape and architecture air photography
- Website owner and master of >5 websites – topic: military history, URBEX and travel photography
- Author of three published books on the Cold War, with material from URBEX missions and more accessible sites
- Cooperation and invited seminal activities on Cold War history by Italian cultural centers and schools

Personal Interests and Free Time Activities

AERONAUTICS

- Aircraft piloting – flight mission planning and execution
- Aviation history, especially military aviation and weaponry of the early Cold War period
- History of nuclear deterrent and stockpile
- Aircraft engines and fuel-burning propulsion techniques
- Aircraft restoration
- Member of the Imperial War Museum, UK

TRAVELING

- Frequent traveler/solo traveler to the US, Canada, Russia, Ukraine, South Korea, Southeast Asia, and > 25 European and Middle East Countries
- Semi-professional photographer of architecture and nature
- Frequent attendee to airshows all over the world, aircraft photographer
- Urbex missions in foreign countries

MUSIC

- Classical music, frequent attendee to concerts and recitals
- Collector of historical recordings and LPs
- Good skill at the piano, 10 years of private lessons

SPORT ACTIVITIES

Aircraft piloting, motorcycling, running, body training, skiing, mountain hiking, kayaking

HOBBIES

Everything aviation, military history, classic cars and motorcycles, static aircraft modeling