

Alessio Ricci

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Summary

Alessio graduated in Architecture and Construction Engineering at the University of Chieti-Pescara, Italy, in 2010 with the thesis *CFD simulations of tall buildings: evaluation of pressure coefficients for the aerodynamic response*. In 2006-2008, in the Socrates Erasmus program first and in the visiting student program then he studied at the Polytechnic University of Valencia, Spain. In 2012, he started the PhD in *Structural and Geotechnical Engineering* at University of Genoa (UniGe), Italy, with a scholarship funded by Ministero dell'Università e della Ricerca (MuR). In 2013, as visiting PhD student he spent three months at the unit of Building Physics and Services of the Eindhoven University of Technology (TU/e), in the Netherlands, where he started his double PhD. In 2017, he was awarded the double PhD degree in Structural and Geotechnical Engineering & Urban Physics with the thesis *Wind flow modeling in urban areas through experimental and numerical techniques*. Since then, he has been involved in a wide range of multidisciplinary research projects as postdoctoral researcher at UniGe, TU/e and KU Leuven (KUL) in Belgium, like: downscaling of atmospheric winds from mesoscale to microscale, characterization of winds in complex environments (urban and port areas), pedestrian-level wind comfort assessment, wind effects on ships and port infrastructures, modeling of thunderstorm downburst winds (THUNDERR project - ERC Advanced Grant), wind effects on solar panels, pollutant dispersion in urban areas, and reduction of aerosol particles in indoor and semi-environments (Covid-19 projects). In May 2021, he was awarded the Senior Postdoctoral Fellowship of Research Foundation of Flanders (FWO) for the project *The impact of atmospheric winds on complex seaport areas and ships*. The project was hosted by the Department of Civil Engineering at KUL, in Belgium. Since October 2022, Alessio is an *Assistant Professor* (tenure track) in Fluid Dynamics at University School for Advanced Studies IUSS of Pavia, in Italy, leading the Wind Engineering research activities in the Climate change impAct studies for RiSk Management (CARISMA) research group.

In recent years, he has built an international profile, he is member of international committees/associations, research groups, the national research school for fluid mechanics J.M. Burgerscentrum in the Netherlands, the Italian Association for Wind Engineering and he has been co-promoter (from 2019 to 2022) of the ANIV's youth group (ANIV-G). Since 2014, he has been involved in organizing committees of International Wind Engineering/Urban Physics and Fluid Dynamics conferences/workshops, Panel Grant evaluations, Graduation and PhD committee boards. He published 22 ISI journal papers and counts 52 scientific contributions to international conferences/workshops in the field of Wind Engineering & Urban Physics. He is peer reviewer of 36 ISI journals, Early Career Editorial Board member of Building & Environment (Elsevier), Editorial board member of Fluid Dynamics & Material Processing, Topic Editor of Atmosphere (MDPI) and Review Editor of Sustainable Design and Construction of Frontiers in Built Environment. He has been teaching assistant for the courses of Structural Engineering and Structural Mechanics at UniGe; Urban Physics at TU/e and KUL; ATHENS course at KUL. Since 2018, he is supervisor of PhD students and MSc and undergraduate students at TU/e, KUL, UniGe and IUSS. Alessio teaches the courses of *Introduction of Wind Engineering* and *CFD in the Built Environment* at IUSS of Pavia for the National Doctoral School in Sustainable Development and Climate Change (SDC), and the course of *Computational Wind Engineering: theory and applications* for undergraduate students at IUSS of Pavia.

Education

09/2007 – 07/2010: Bachelor and Master in *Architecture and Construction Engineering* at University of G. D'Annunzio of Chieti, Italy.

2006 - 2008: *Erasmus Socrates program* and *visiting student program* at the Polytechnic School of Valencia, Spain.

PhD career

2012 – 2017: *Double PhD degree* in *Structural and Geotechnical Engineering* and *Urban Physics* at UniGe and TU/e.

Thesis: *Wind flow modeling in urban areas through experimental and numerical techniques*

2015 - 2017: *PhD candidate* in *Wind Engineering & Urban Physics* at the Department of the Built Environment, Unit of Building Physics, TU/e

Supervisors: Prof. B. Blocken and Dr. I. Kalkman

2012 - 2015: *PhD scholarship* of three years for the PhD in *Structural and Geotechnical Engineering* at the Department of Civil, Chemical and Environmental Engineering – Giovanni Solari WinDyn Research Group of UniGe, funded by Ministero dell'Università e della Ricerca (MuR)

Supervisors: Prof. M.P. Repetto and Prof. M. Burlando

Postdoctoral career

11/2022 - present: *Assistant Professor* (tenure track) in Fluid Dynamics and Head of the Wind Engineering research activities at the University School for Advanced Studies IUSS of Pavia (Italy) in the Research group of *Climate change impAct studies for RISk Management* (CARISMA).

10/2021 – 11/2022: *Senior Postdoctoral Fellow* of Research Foundation of Flanders (FWO)

Project: *The impact of atmospheric winds on complex seaport areas and ships* (no. 1256822N)

Funding body: Research Foundation of Flanders (FWO)

Hosting institution: Department of Civil Engineering, Building Physics and Sustainable Design, KUL

10/2021 - present: *Guest Researcher* at TU/e, Department of the Built Environment, Building Physics and Services

08/2020 – 09/2021: *Junior Postdoc* at TU/e, Department of the Built Environment, Building Physics and Services

08/2018 - 07/2020: *Junior Postdoc* of FWO at KUL, Department of Civil Engineering, Building Physics and Sustainable Design

04/2017 - 07/2018: *Junior Postdoc* at TU/e, Department of the Built Environment, Building Physics and Services

04/2017 – 07/2018: *Project Engineer* of the Atmospheric Boundary Layer Wind Tunnel of TU/e

Teaching and supervising

PhD courses

from 2024: *CFD in the Built Environment* at IUSS of Pavia, Italy, for the National Doctoral School in Sustainable Development and Climate Change (PhD - SDC)

from 07/2023: *Introduction of Wind Engineering* at IUSS of Pavia, Italy, for the National Doctoral School in Sustainable Development and Climate Change (PhD - SDC)

Undergraduate and master courses

11/2023: *Computational Wind Engineering: theory and applications* at IUSS of Pavia, Italy, undergraduate students of Mathematics and Physics

02/2018 – 04/2022: teaching assistant for the *Urban Physics* course at the Department of the Built Environment, Building Physics and Services, TU/e - Held by Prof. B. Blocken

01/2013 – 12/2014: teaching assistant for *Structural Engineering course* at the Faculty of Civil Engineering, UniGe (Italy) - Held by Prof. G. Solari

01/2013 – 12/2014: teaching assistant for *Structural Mechanics course* at the Faculties of Naval Engineering, Chemical Engineering, Electrical Engineering, UniGe (Italy) - Held by Prof. M. Lepidi

Guest lectures for undergraduate, MSc, PhD courses & international schools

11/2019: *Building Aerodynamics* (module 1) & *Wind-tunnel testing* (module 2)

Course of *Sports, Building & City Aerodynamics* held by Dr. A. Ricci & Prof. B. Blocken

International school: *ATHENS Network - International courses for BSc and MSc students*

Host institution: Department of Civil Engineering, Building Physics and Sustainable Design, KUL

10/2019: *Building Aerodynamics* (module 1) & *Wind-tunnel testing* (module 2)

Course of *Urban Physics* held by Dr. A. Ricci & Prof. B. Blocken

Institution: Department of Civil Engineering, Building Physics and Sustainable Design, KUL

11/2018: *Wind-tunnel testing* (module 1) & *Basic aspects of fluid flow* (module 2)

Course of *Sports, Building & City Aerodynamics* held by Dr. A. Ricci & Prof. B. Blocken

International school: *ATHENS Network - International courses for BSc and MSc students*

Host institution: Department of Civil Engineering, Building Physics and Sustainable Design, KUL

12/2018: *Computational Fluid Dynamics in Building Simulation*

Course of *Building Simulation* held by Dr. A. Ricci & Prof. D. Saelens

Institution: Department of Civil Engineering, Building Physics and Sustainable Design, KUL

11/2018: *Basic aspects of fluid flow*

Course of *Urban Physics* held by Dr. A. Ricci & Prof. B. Blocken

Institution: Department of Civil Engineering, Building Physics and Sustainable Design, KUL

Supervision of PhD students

09/2018 - present:

1) *Ivana Ivančić*

Project: *Risk assessment of ports exposure to extreme winds*

Funding body: IUSS & Ministry of the University and Research

Institutes: IUSS - UniGe

Supervisors: Dr. A. Ricci & Prof. M. Burlando

2) *Priyadarshi Maurya*

Project: *Adaptive response to climate change for safety management airport infrastructures under strong winds*

Funding body: IUSS, Ministry of the University and Research, SAVE S.p.a

Institutes: IUSS, SAVE S.p.a (Italy), Western Ontario University (Canada)

Supervisors: Dr. A. Ricci, Dr. G. Fosser, Prof. G. Bitsuamlak, Dr. A. Manganaro

3) *Joan Baptista Rico Orero*

Project: *CFD environmental pollutant dispersion simulations*

Funding body: CERN (European Organization for Nuclear Research) – Switzerland

Institutes: CERN (Switzerland) – KUL (Belgium) – IUSS (Italy)

Supervisors: Prof. B. Blocken, Dr. O. Rios, Dr. A. Ricci

4) *Anjali Radhakrishnan Jayakumari*

Project: *Analysis of the effect of wind on the performance of industrial ventilation systems*

Funding body: TU/e and French Research and Safety Institute (France)

Institutes: TU/e - French Research and Safety Institute (France)

Supervisors: Prof. B. Blocken, Dr. A. Ricci, Dr. S. Gillmeier, Dr. R. Guichard

5) *Peng Qin*

Project: *Numerical and experimental investigations of pollutant dispersion in urban areas*

Funding body: China Scholarship Council

Institute: TU/e

Supervisors: Prof. B. Blocken and Dr. A. Ricci

6) *Lili Xia*

Project: *Evaporative cooling of water spray system used in urban areas*

Funding body: China Scholarship Council

Institute: TU/e

Supervisors: Dr. A. Ricci, Dr. H. Montazeri, Prof. B. Blocken

5) *Josip Žužul* (PhD defense held in May 2022)

Project: *CFD modeling of thunderstorm downbursts*

Funding body: European Research Council (ERC) - European Union's Horizon 2020 research and innovation program (grant no. 741273) - *THUNDERR* project - Detection, simulation, modelling and loading of thunderstorm outflows to design wind-safer and cost-efficient structures

Institutes: UniGe - TU/e

Supervisors: Prof. G. Solari, Dr. M. Burlando, Prof. B. Blocken, Dr. A. Ricci

Supervision of Postdoctoral students

1) *Josip Žužul*

Project: *Hazard maps of extreme winds, high/low temperatures, and sea storms, setup of an experimental operational forecast system of wind flows within the urban canopy of the Municipality of Genoa.*

Funding body: Municipality of Genoa

Institute: UniGe

Supervisors: Prof. M. Burlando & Dr. A. Ricci

Supervision of undergraduate and graduate students

09/2023 – present: Tutor of three bachelor and one master student at IUSS.

09/2021 - 04/2022:

1) *Lynn Passlack*

Project 1: *CFD simulations of pollutant dispersion in a street canyon: the impact of ideal and realistic sources*

Institute: Department of the Built Environment, Building Physics and Services, TU/e

Supervisors: Dr. A. Ricci, MSc P. Qin, Prof. B. Blocken

09/2019 - 04/2020:

2) *Dean Pelkmnas*

Project 1: *Numerical simulations of pollutant dispersion in a street canyon*

Institute: Department of the Built Environment, Building Physics and Services, TU/e

Supervisors: Dr. A. Ricci, MSc P. Qin, Prof. B. Blocken

3) *Bart van Gael*

Thesis: *CFD simulations of downburst wind flows around an idealized low-rise building*

Institute: Department of Civil Engineering, Building Physics and Sustainable Design, KUL (Belgium)

Supervisors: Dr. A. Ricci, C. Alanis Ruiz, Prof. B. Blocken

4,5,6) *Fabiola Caboni, Martina Guasco, Martina Orlanno*

Thesis: *Experimental and numerical analysis for the pedestrian comfort assessment of a newly designed tower with vertical green park in Medellín*

Institute: Department of Civil, Chemical and Environmental Engineering (Faculty of Civil Engineering) - Department of Architecture and Design (Faculty of Architecture), UniGe

Supervisors: Dr. A. Ricci, Prof. A. Giachetta, Prof. M.P. Repetto

Membership in Committee Boards

Committee member of national and international contests

10/2023 – present: Assembly permanent member of the *National Doctoral School in Sustainable Development and Climate Change*.

20/07/2023: Committee member at IUSS of Pavia for the selection of a research candidate in the framework of the European project *Methods and Tools Innovations for Seismic Risk Assessment for Nuclear Power Plants (METIS)*.

06/2023 – 09/2023: Board member of the *National Doctoral School in Sustainable Development and Climate Change* for the selection of PhD candidates of the 39th cycle, for the curricula *Earth System and Environment* and *Socio-Economic Risk and impacts*.

Committee member of PhD defense

05/2020 – present:

Member and secretary of the jury of the PhD defense of *Giacomo Alessi*

Thesis: *Adjoint shape optimization based on large eddy simulations through an adaptation of the Reynolds-averaged Navier-Stokes equations*

Institutes: KUL - von Kármán Institute (VKI)

Committee member of undergraduate and graduate students

09/2018 - present:

Member of the jury of the undergraduate student at IUSS of Pavia.

Member of the jury of the MSc *Ruben Hetebrij*

Thesis: *CFD analysis of the night cooling capabilities of parallel openable windows including assessment of CFD modeling methodology*

Institute: Department of the Built Environment, Building Physics and Services, TU/e

Member of the jury for MSc final presentation of *Jan Bots*

Thesis: *Impact of waves on exhaust gas dispersion around ships*

Institute: Department of Mechanical Engineering, TU/e

Member of the jury for MSc final presentation of *Martina Guasco* and *Martina Orlanno*

Thesis: *Experimental and numerical analysis for the pedestrian comfort assessment of a newly designed tower with vertical green park in Medellin*

Institute: Department of Architecture and Design, Faculty of Architecture, UniGe

Member of the jury for MSc final presentation of *Bart Van Gael*

Thesis: *CFD simulations of downburst wind flows around an idealized low-rise building*

Institute: Department of Civil Engineering, Building Physics and Sustainable Design, KUL

Research projects with national and international research groups

Research projects funded by public institutions

1) *Hazard maps of extreme winds, high/low temperatures, and sea storms, setup of an experimental operational forecast system of wind flows within the urban canopy of the Municipality of Genoa (ADAPTNOW)*

Objective:

Providing the municipality of Genoa with hazard maps of extreme winds, high/low temperatures, and sea storms.

Members: UniGe, Civil Protection Department of Genoa Municipality, IUSS

Members of UniGe: Dr. M. Burlando, Dr. F. Canepa, Dr. J. Zuzul

Members of IUSS: Dr. A. Ricci

Role in project: Supervision and conceptualization of the numerical campaign

Duration: 2023 – 2025

Budget: 90,000 euro

Funding body: Municipality of Genoa - Interreg Alpine Space Program

2) *Engineering Research Infrastructures for the European Synergies (ERIES)*

Objective: ERIES responds to the call INFRA-2021-SERV-01-07: Research infrastructure services advancing frontier knowledge with the overall objective of providing transnational access (TA) to advanced research infrastructures in the fields of structural, seismic, wind and geotechnical engineering. This project, together with the research infrastructure team assembled, provides access to leading experimental facilities that permit users to advance frontier knowledge and conduct curiosity-driven research towards: the reduction of losses and disruption due to these hazards; the management of their associated risk; and the development of innovative solutions to address them that will contribute to a greener and more sustainable society.

Duration: 2021 - 2026

Total budget: 12,824,500 euro

TU/e budget: 898,645 euro

Role in project: from 2021 to 2023 member of the TA-RI of TU/e.

Funding body: European Commission – HORIZON-INFRA-2021-SERV-01-07 (project ID: 101058684)

3) *Reliable Accelerated Power generation for Industrial Deployment (RAPID MOOI)*

Goal: The consortium aims to reduce costs of photovoltaic (PV) systems on large roofs and to increase the physical integration of these systems. The project partners aim to achieve this, on the one hand, through easier installation (resulting in lower costs) and, on the other, in a lightweight system with which all types of roofs can be covered. The objective of the project is to optimize the design of PV systems and to guarantee a safe mounting and operation on buildings.

Consortium: TU/e, Solarge, Solarfields, RKT Tholen, ELRO Dakbedekking Zuid

TU/e task: Wind-tunnel testing, CFD simulations and data analysis for different PV systems

Duration: 2020 - 2024

TU/e task budget: 656.789 euro

Role in project: Supervision and conceptualization of the numerical campaign

Funding body: Energy Innovation NL (project no. MOOI22001)

4) *Wind loads and security ships (WINDLASS) - Joint Industrial Project (JIP)*

Goal: Characterization of the wind field in exposed ports and waterways to develop a practical computer tool to predict wind loads on ships and their response (drift angle, berthing loads and mooring line loads).

Task leaders: MARIN, TU/e, KRVE, WHIFFLE, SVASEK Hydraulic

TU/e task: Modeling of wind by means of CFD and comparison with LiDAR scanner data at the ECT terminal of the Port of Rotterdam

Role in project: Principal investigator

Duration: 2018 - 2022

TU/e budget: 81,000 euro

Funding body: MARIN – WINDLASS JIP

5) *Covid-19 projects*

Project 1: *Aerosol reduction in indoor sport centers I*

Duration: 1 month; total budget: 41,000 euro; funding body: Sportinnovator

Project 2: *Aerosol reduction in indoor sport centers II*

Duration: 5 months; total budget: 249,000 euro; funding body: Top Team Sports

Project 3: *Towards safe indoor and semi-indoor sports events during the COVID-19 pandemic*

Duration: 16 months; total budget: 913,000 euro; funding body: Health-Holland

Goal: Experimental and CFD investigations to limit the aerosol particle concentrations in indoor and semi-indoor environments during the pandemic Covid-19.

Role in project: Supervision of experimental and numerical campaigns.

6) *Microscale wind flow modeling in the newly built IJmuiden sea lock (Port of Amsterdam)*

Goal: Characterization of wind in the newly built IJmuiden sea lock (Port of Amsterdam) by means of CFD simulations and on-site measurements, and development of a software integrated tool (*Windanalyse IJmuiden Haven 1.0*) to improve the safety navigation in the new sea lock.

Case study: IJmuiden sea lock (Port of Amsterdam)

Institutions: TU/e and KNMI (Koninklijk Nederlands Meteorologisch Instituut)

Role in project: Execution of on-site measurements, CFD simulations and development of the software integrated tool.

Duration: 2017 - 2018

TU/e budget: 51,200 euro

Funding body: KNMI (Koninklijk Nederlands Meteorologisch Instituut)

7) *Monitoring, simulating and predicting wind for the safety and smart management of ports and urban (ID ROL: 9820)*

Goal: The project aims at extending the methodology already developed for port areas to complex urban environments as historical Mediterranean cities, in order to improve the prediction of wind conditions in such environments by means of LiDAR measurements, wind-tunnel-testing and CFD simulations, and increase the safety management of port infrastructures, green-energy systems, and the air quality in urban contexts.

Duration: 2016 - 2018

Members: GS-WinDyn Research group, UniGe (Italy)

Principal investigator: Prof. G. Solari

Role in project: CFD simulations for the city of Livorno including the seaport area and the comparison with on-site measurements.

Total budget: 180,000 euro

Funding body: Compagnia di San Paolo

8) *CFD simulations of wind flows in urban and seaport areas* in the framework of *Wind and Ports* and *Wind, Ports and Sea* (grant no. B82F13000100005)

Goal: modeling of wind in urban areas characterized by complex architectural features located nearby commercial and touristic terminals of port areas.

Duration: 6 months (2015)

Members: GS-WinDyn Research group, UniGe

Principal investigator: Prof. G. Solari

Supervision: Prof. G. Solari, Prof. M.P. Repetto, Dr. M. Burlando

Role in project: CFD simulations of a small portion of Livorno city

Duration: 6 months (April 2015 - September 2015)

Budget: 9,000 euro (scholarship)

Funding body: European Territorial Cooperation Objective, Cross-border program Italy - France Maritime 2007-2013

9) *Optimization of a vertical axis-wind turbine of Savonius type equipped with stators*

Goal: Aerodynamic study for the optimization of a vertical axis-wind turbine of Savonius type equipped with stators by means of CFD simulations and wind-tunnel testing. Numerical and experimental results are compared in terms of wind speed and aerodynamic forces.

Principal investigators: Prof. M.P. Repetto, Dr. M. Burlando

Role in project: CFD simulations and wind-tunnel testing of the wind turbine and stators

Duration: 3 months (May 2013 – July 2013)

Total budget: 60,000 euro

Funding body: POR-FESR 2007-2013

10) *Dynamic, stability and control of slender structures* (PRIN 2010-2011)

Goal: analyzing the dynamic behavior of strings and cables equipped of mobile mass. UniGe will collaborate with the International Research Center on Mathematics of Complex Systems to formulate the equations representative of the physical problem. UniGe will develop two different research projects: (1) the aeroelastic instability of slender structures and (2) the dynamic and instability study on pedestrian bridges.

Scientific coordinator: Prof. A. Luongo (Università de L'Aquila)

Principal Investigator: Prof. G. Piccardo (UniGe)

Duration: 2013 - 2016

Budget for UniGe: 77,143 euro

Funding body: Ministero dell'Università e della Ricerca (MuR)

Research/commercial projects carried out in the TU/e wind tunnel as Project Engineer and team member

03/2021: *Wind-tunnel testing of the reduced-scale (1:4) DrivAer model car*

Topic: vehicle aerodynamics

Techniques: wind-tunnel testing and CFD simulations

Role: supervising the PhD project of P. Qin

06/2020: *Wind-tunnel testing of two reduced-scale models of an idealized low-rise building*

Topic: building aerodynamics and ventilation
 Techniques: wind-tunnel testing and CFD simulations
 Role: supervising the PhD project of *Radhakrishnan J. Anjali*
02/2018 – 02-2020: Atmospheric boundary layer (ABL) characterization for the wind-tunnel facility of TU/e
 Topic: characterization of the newly built ABL wind tunnel of TU/e
 Techniques: wind-tunnel testing and CFD simulations
 Role: co-investigator with Dr. S. Gillmeier
09/2019: Wind-tunnel testing of full-scale TU/e and Belgian racing cars
 Topic: racing car aerodynamics
 Techniques: wind-tunnel testing
 Role: co-investigator with Dr. S. Gillmeier
08/2019: Wind-tunnel testing of reduced-scale (1:4) marathon athletes
 Topic: sport aerodynamics
 Techniques: wind-tunnel testing
 Role: supporting the experimental setup
06/2018 and 10/2019: Aerodynamic investigations of spoilers mounted on different reduced-scale (1:5) trucks
 Topic: vehicle aerodynamics
 Techniques: wind-tunnel testing
 Role: executing the wind-tunnel tests and analysis of results
11/2018 – 12/2018: Wind-tunnel testing of two full-scale javelins
 Topic: sport aerodynamics
 Techniques: wind-tunnel testing and CFD simulations
 Role: executing the wind-tunnel tests with Dr. S. Gillmeier
11/2018 and 12/2018: Wind-tunnel testing a full-scale team time trial configuration of Jumbo-Lotto cycling team
 Topic: sport aerodynamics
 Techniques: wind-tunnel testing
 Role: executing the wind-tunnel tests
11/2018: Wind-tunnel testing of a full-scale speed ski athlete
 Topic: sport aerodynamics
 Techniques: wind-tunnel testing
 Role: executing the wind-tunnel tests
07/2018 – 09/2018: Wind-tunnel testing of a solar car at reduced scale 1:4
 Topic: racing car aerodynamics
 Techniques: wind-tunnel testing
 Role: executing the wind-tunnel tests
05/2018: Wind-tunnel testing of a reduced-scale (1:4) peloton of 121 cyclists
 Topic: sport aerodynamics
 Techniques: wind-tunnel testing
 Role: supporting the experimental setup
05/2018: Wind-tunnel testing of Paralympic athletes of the Irish National Team
 Topic: sport aerodynamics
 Techniques: wind-tunnel testing
 Role: supporting the experimental setup
04/2018: Wind-tunnel testing of a solar car at reduced scale 1:4
 Topic: racing car aerodynamics
 Techniques: wind-tunnel testing
 Role: executing the wind-tunnel tests

Membership in national and international associations

2019 - 2022: co-promoter of the Youth Group (ANIV-G) of the Italian Association for Wind Engineering (ANIV)

2018 - present: staff member of the J.M. Burgerscentrum Research School for Fluid Mechanics (Netherlands)

2018 - 2022: member of the Unit Building Physics and Sustainable Design of KUL (Belgium)

2015 - present: member of the Unit Building Physics Research Group of TU/e (Netherlands)

2014 - present: *member* of the Italian Association for Wind Engineering (ANIV)

2012 - 2021: *member* of the GS-WinDyn Research Group of UniGe (Italy)

Membership of national/international conferences/workshops

07/2025: *General chair* of COBEE 2025 - the 6th International Conference on Building Energy and Environment, (Eindhoven, July 2025).

09/2024: *Scientific committee member* of In-Vento 2024 – the 18th Conference of the Italian Association of Wind Engineering (Pisa, September 2024).

11-14/07/2023: *co-organizer* of the 18th OpenFOAM Workshop, Genoa, Italy.

27/07/2022: *chairman* of the parallel session *Advanced Modeling and Building Simulations – CFD 4* in COBEE 2022 - the 5th International Conference on Building Energy and Environment, Montreal, Canada, 25-29 July 2022.

04/09/2022: *co-organizer* and *co-chairman* of the *PhD session* promoted by the youth group of the Italian Association for Wind Engineering (ANIV-G) before *In-Vento 2022* – the 17th Conference of the Italian Association of Wind Engineering (Milano, 4-7 September 2022).

17/05/2022: *co-chairman* of the parallel session *Environmental Wind Engineering* at the *14th Americas Conference on Wind Engineering* (ACWE 2022), Lubbock, Texas, United States.

2020 - present: *organizer* and *co-chairman* of *live talks* organized by the youth group of the Italian Association for Wind Engineering:

1. *The fascinating challenges of bluff-body aerodynamics* - Prof. G. Buresti (UniGe)
2. *Seminar on Scientific and Technical Publishing* - Prof. T. Stathopoulos (Concordia University)
3. *Material barriers to the transport of momentum and vorticity in turbulence* - Prof. G. Haller (ETH Zürich)
4. *Full-scale measurements of wind and wind loading: a renewed importance* - Prof. F. Lombardo (University of Illinois at Urbana-Campaign (USA))

07/09/2020: *co-organizer* and *co-chairman* of the *PhD session* promoted by the youth group of the Italian Association for Wind Engineering (ANIV-G) before *In-Vento 2020* online.

26/01/2020: *co-organizer* and *co-chairman* of the *inaugural meeting* of the youth group of the Italian Association for Wind Engineering at Politecnico di Milano

28-29/09/2017: *member* of the organizing committee for the *1st International Conference of Urban Comfort and Environment Quality (URBANCEQ 2017)* hosted by UniGe

22-25/06/2014: *member* of the Organizing Committee for the *13th International Conference of the Italian Association for Wind Engineering* hosted by UniGe.

Training course for professionals

04/09/2023: Course of *Wind Engineering for ports and naval infrastructures & wind turbines* – module *CFD simulations of complex wind fields*. CETENA S.p.a. Gruppo Fincantieri.

Invited speaker of national and international workshops/conferences

07/12/2023: *Invited speaker* of the Faculty of Architecture of UniGe. Lecture for the course of *Principles of Sustainability*.

07/10/2022: *Invited speaker* of the Dutch Wind Engineering Society Symposium *What's in it for you?* TU/e, the Netherlands.

25-29/07/2022: *Invited speaker* of the special session *Large-scale wind engineering applications* in COBEE 2022 - the 5th International Conference on Building Energy and Environment, Montreal, Canada, 25-29 July 2022.

18/07/2022: *Invited speaker* of the Dutch OpenFOAM workshop 2022 (TU Delft, Netherlands).

Peer reviewer of international scientific journals, conferences, and editorial board membership

Editorial boards

04-2023 – present: *Editorial board member* of Fluid Dynamics & Material Processing – Tech Science Press

10-2022 – present: *Early Career Editorial Board member* of Building & Environment - Elsevier

03-2021 – present: *Review Editor* of Sustainable Design and Construction - Frontiers in Built Environment

10-2020 – present: *Topic Editor* of Atmosphere (MDPI)

06-2020 – present: *Reviewer board* of Energies (MDPI)

Peer reviewer of international journals

1. *Advances in Civil Engineering*, Hindawi
2. *Aerospace*, MDPI
3. *Algorithms*, MDPI
4. *Applied Ocean Research*, Elsevier
5. *Applied Sciences*, MDPI
6. *Atmosphere*, MDPI
7. *Atmospheric Chemistry and Physics*, Copernicus office
8. *Buildings*, MDPI
9. *Building and Environment*, Elsevier
10. *Building Simulation*, Springer
11. *Energies*, MDPI
12. *Entropy*, MDPI
13. *Environmental Fluid Mechanics*, Springer
14. *European Journal of Mechanics / B Fluids*, Elsevier
15. *International Journal of Environmental Research and Public Health*, MDPI
16. *Journal of Architectural Engineering*, ASCE Library
17. *Journal of Building Engineering*, Elsevier
18. *Journal of Geophysical Research – Atmospheres* – AGU publications
19. *Journal of Marine Science and Engineering*, MDPI
20. *Journal of Sandwich Structures and Materials*, SAGE Journals
21. *Journal of Sustainability Science and Management*, UMT
22. *Journal of Wind Engineering and Industrial Aerodynamics*, Elsevier
23. *Meccanica*, Springer
24. *Mathematical and Computational Applications*, MDPI
25. *Sensors*, MDPI
26. *Symmetry*, MDPI
27. *Ships and Offshore Structures*, Taylor & Francis Group
28. *Sustainability*, MDPI
29. *Sustainable Cities and Society*, Elsevier
30. *Sustainable Design and Construction*, Frontiers in Built Environment
31. *The Open Atmospheric Science Journal*, Bentham Open
32. *Urban Climate*, Elsevier
33. *Wind and Structures - An International Journal*, Techno Press
34. *Wind*, MDPI
35. *Indoor air*, Hindawi
36. *International Journal of Sport Management and Marketing*, INDERSCIENCE Publishers

Peer reviewer for international conferences

1. ICWE16 – The 16th International Conference on Wind Engineering– Florence (Italy), 27-21 August 2023.
2. *Building Simulation Conference* - Shanghai (China), 4-6 September 2023;
3. *Building Simulation Conference* - Bruges (Belgium), 1-3 September 2021;
4. BBAA IX – *The 9th International Colloquium on Bluff Body Aerodynamics and Applications* - Birmingham, UK, 20-23 July 2020 (cancelled due to Covid-19);
5. *NODYCON 2021 Springer Series - 2nd International Nonlinear Dynamics Conference*, 16/19 February 2021
6. *Building Simulation Conference*, Rome (Italy), 2-4 September 2019;
7. *Urban Transitions Global Summit*, Shanghai (China), 5-9 September 2016;
8. *The 2nd International Conference on Wind Energy Harvesting*, Catanzaro Lido (Italy), 21-23 March 2018.

Peer reviewer of books and monographies

Wind Effects on Structures – Modern structural design for wind, Chapter 6: *Computational Wind Engineering*.
Authors: E. Simiu & D. Yeo. Ed. John Wiley & Sons Ltd, 2019.

International Panel Grant Evaluator

1. *Panel grant evaluator* of University of Ljubljana for the ERC panel PE8: Products and Processes Engineering.
2. *Panel grant evaluator* of VLAIO – Flanders Innovation & Entrepreneurship, Belgium

Scientific publications

Books, monographs, chapters

Ricci A. PhD thesis. *Wind flow modeling in urban areas through experimental and numerical techniques*.
University of Genoa & Eindhoven University of Technology, 2017. ISBN: 978-90-386-4258-1. Bouwstenen 226.
Link: https://pure.tue.nl/ws/portalfiles/portal/60840985/20170411_Ricci.pdf

Publications on international scientific journals

1. Zhao Y., Chew L.W., Fan Y., Gromke C., Hang J., Yug Y., **Ricci A.**, Zhang Y., Xuej Y., Fellini S., Mirzaei P.A., Gao N., Carpentieri M., Salizzoni P., Niu J., Carmeliet J., 2023. *Funnel tunnel research for challenges of urban climate*. Urban Climate 51, 101659.
DOI: <https://doi.org/10.1016/j.uclim.2023.101659>
2. Jayakumari, A.K.R., Gillmeier S., **Ricci A.**, Guichard R., Blocken B., 2023. *Scaling effects on experimentally obtained pressures on an idealized building: possible implications for a mechanical ventilation system for asbestos removal*. Journal of Wind Engineering and Industrial Aerodynamics 239, 105442.
DOI: <https://doi.org/10.1016/j.jweia.2023.105442>
3. Qin P., **Ricci A.**, Blocken B., 2023. *CFD simulation of pollutant dispersion in a street canyon: Impact of idealized and realistic sources*. E3S Web of Conferences, 396, 02042.
DOI: 10.1051/e3sconf/202339602042
4. **Ricci A.**, Vasaturo R., Blocken B., 2023. *An integrated tool to improve the safety of seaports and waterways under strong wind conditions*. Journal of Wind Engineering and Industrial Aerodynamics 234, 105327.
DOI: <https://doi.org/10.1016/j.jweia.2023.105327>
5. Qin P., **Ricci A.**, Blocken B., 2023. *CFD simulation of pollutant dispersion in a street canyon: impact of ideal versus realistic point source emissions*. 5th International Conference on Building Energy and Environment, COBEE 2022. Environmental Science and Engineering. Book Series, pp. 33-39. ISBN: 978-981199821-8.
DOI: 10.1007/978-981-19-9822-5_5
6. Xia L., **Ricci A.**, Qin P., Blocken B., 2023. *Reducing aerosol particle concentration in indoor spaces with mechanical ventilation and aircleaning: evidences and challenges*. 5th International Conference on Building Energy and Environment, COBEE 2022. Environmental Science and Engineering. Book Series, pp. 1803-1806. ISBN: 978-981199821-8.
DOI: 10.1007/978-981-19-9822-5_188
7. Žužul J., **Ricci A.**, Burlando M., Blocken B., Solari G., 2023. *CFD analysis of the WindEEE Dome produced downburst-like winds*. Journal of Wind Engineering and Industrial Aerodynamics 232, 105268.
DOI: <https://doi.org/10.1016/j.jweia.2022.105268>
8. **Ricci A.**, Burlando M., Repetto M.P., Blocken B., 2022. *Static downscaling of mesoscale wind conditions into an urban canopy layer by a CFD microscale model*. Building and Environment 225, 109626.
DOI: <https://doi.org/10.1016/j.buildenv.2022.109626>
9. Cosnefroy M, Qin P., **Ricci A.**, Gillmeier S., van Hooff T., Hornikx M., 2022. *A database of scale model measurements for urban sound propagation in a moving atmosphere and first comparisons with simulations*. 24th International Congress on Acoustics (ICA), Gyeongju-si, South Korea, 24-28 October 2022, Code 188000.
10. **Ricci A.**, Guasco M., Caboni F., Orlanno M., Repetto M.P., Giachetta A., 2022. *Impact of surrounding environments and vegetation on wind comfort assessment of a new tower with vertical green park*. Building and Environment 207, 108409.
DOI: <https://doi.org/10.1016/j.buildenv.2021.108409>

11. **Ricci A.**, Blocken B., 2021. English title: Reports from international young researchers (2) COVID-19 and Wind Engineering: the contribution by Eindhoven University of Technology and KU Leuven. *Journal of Japan Wind Engineering Society (in Japanese)* 46, 275-277.
DOI: <https://doi.org/10.5359/jawe.46.275>
12. Blocken B., Druenen T., **Ricci A.**, Kang L., van Hooff T., Qin P., Xia L., Alanis Ruiz C., Arts J.H., Diepens J.F.L., Maas G.A., Gillmeier S.G., Vos S.B., Brombacher C., 2021. *Ventilation and air cleaning to limit aerosol particle concentrations in a gym during the COVID-19 pandemic*. *Building and Environment* 193, 107659.
DOI: <https://doi.org/10.1016/j.buildenv.2021.107659>
13. **Ricci A.**, Blocken B., 2020. *On the reliability of the 3D steady RANS approach in predicting microscale wind conditions in seaport areas: The case of the IJmuiden sea lock*. *Journal of Wind Engineering and Industrial Aerodynamics* 207, 104437.
DOI: <https://doi.org/10.1016/j.jweia.2020.104437>
14. **Ricci A.**, Janssen W.D., van Wijhe H.J., Blocken B., 2020. *CFD simulation of wind forces on ships in ports: Case study for the Rotterdam Cruise Terminal*. *Journal of Wind Engineering and Industrial Aerodynamics* 205, 104315.
DOI: <https://doi.org/10.1016/j.jweia.2020.104315>
15. **Ricci A.**, Kalkman I.M., Blocken B., Burlando M., Repetto M.P., 2020. *Impact of turbulence models and roughness heights in 3D steady RANS simulations of wind flows in urban environments*. *Building and Environment* 171, 106617.
DOI: <https://doi.org/10.1016/j.buildenv.2019.106617>
16. **Ricci A.**, Blocken B., 2019. *Experimental and Computational Analysis of Microscale Wind Conditions in the Port of Amsterdam*. *Lecture Notes in Civil Engineering (Springer), Proceedings of the XV Conference of the Italian Association for Wind Engineering* 27, 587-598.
DOI: https://doi.org/10.1007/978-3-030-12815-9_45
17. **Ricci A.**, Burlando M., Repetto M.P., Blocken B., 2019. *Simulation of urban boundary and canopy layer flows in port areas induced by different marine boundary layer inflow conditions*, *Science of the Total Environment* 670, 876-892.
DOI: <https://doi.org/10.1016/j.scitotenv.2019.03.230>
18. **Ricci A.**, Kalkman I.M., Blocken B., Burlando M., Freda A., Repetto M.P., 2018. *Large-scale forcing effects on wind flows in an urban environment: impact of inflow conditions*, *Sustainable cities and society* 42, 593-610.
DOI: <https://doi.org/10.1016/j.scs.2018.08.012>
19. **Ricci A.**, Burlando M., Repetto M.P., Kalkman I., Blocken B., 2017. *Sensitivity test of different inflow conditions for CFD simulations of wind flow in urban areas*. *Proceedings of the 7th European and African Conference on Wind Engineering, EACWE 2017. International Association for Wind Engineering (IAWE)*. Code 129213.
20. **Ricci A.**, Kalkman I.M., Blocken B., Burlando M., Freda A., Repetto M.P., 2017. *Local-scale forcing effects on wind flows in an urban environment: impact of geometrical simplifications*, *Journal of Wind Engineering and Industrial Aerodynamics* 170, 238-255.
DOI: <https://doi.org/10.1016/j.jweia.2017.08.001>
21. **Ricci A.**, Burlando M., Freda A., Repetto M.P., 2017. *Wind tunnel measurements of the urban boundary layer development over a historical district in Italy*, *Building and Environment* 111, 192-206.
DOI: <https://doi.org/10.1016/j.buildenv.2016.10.016>
22. Burlando M., **Ricci A.**, Freda A., Repetto M.P., 2015. *Numerical and experimental methods to investigate the behaviour of vertical-axis wind turbines with stators*, *Journal of Wind Engineering and Industrial Aerodynamics*, 144, 125-133.
DOI: <https://doi.org/10.1016/j.jweia.2015.04.006>

Publications in national and international magazines

1. Blocken B., Druenen T., **Ricci A.**, Kang L., van Hooff T., Qin P., Xia L., Alanis Ruiz C., Arts J.H., Diepens J.F.L., Maas G.A., Gillmeier S.G., Vos S.B., Brombacher C., 2021. *Ventilatie en luchtreiniging tegen aerosoldeeltjes in sportscholen*. 1 Jun 2021, In: *TVVL Magazine, Netherlands*, 3, 50-54.

2. **Ricci A.**, Janssen W.D., van Wijhe H.J., Blocken B. *How does the surrounding built environment affect the wind forces on moored ships in ports?* The Naval Architect Magazine, vol. February 2021, pp. 37-41. The Royal Institution of Naval Architects, London, UK.
3. Pelkmans D., **Ricci A.**, Qin P., Blocken B. *3D Steady RANS Simulation of Pollutant Dispersion in Streets.* Inside Information, Mollier, pp 49. Academic Year 2020-21. Mollier – INSide Information - Eindhoven University of Technology, Netherlands.

Contributions in national and international conferences/workshops

1. Romain G., K. R. Jayakumari A., **Ricci A.**, Gillmeier S., Blocken B., 2024. *Towards a maximum wind speed for a ventilated asbestos removal worksites.* RoomVent24 - 17th RoomVent conference, April 22-25, Stockholm, Sweden.
2. K. R. Jayakumari A., **Ricci A.**, Guichard R., Gillmeier S., Blocken B. *On the reliability of a ventilation network tool for predicting depressurization breach in pollutant containment zones.* BS2023 – Building Simulation Conference, Shanghai, China, 4-7 September 2023.
3. Xia L., **Ricci A.**, Qin P., Blocken B. *Aerosol concentration and airflow distribution assessment in a multi-zone indoor space with mechanical ventilation: field measurements and CFD simulations.* BS2023 – Building Simulation Conference, Shanghai, China, 4-7 September 2023.
4. **Ricci A.**, Blocken B. *Prediction of mean wind velocity in port areas for wind load provisions: simulated versus analytical profiles.* ICWE16 - The 16th International Conference on Wind Engineering, Florence, Italy, 27-21 Aug 2023.
5. Xhelaj A., Žužul J., Canepa F., **Ricci A.**, Romanic D., Burlando M., Hangan H. *Comparison between a stationary downburst-like impinging jet and analytical models.* ICWE16 - The 16th International Conference on Wind Engineering, Florence, Italy, 27-21 Aug 2023.
6. K. R. Jayakumari A., Gillmeier S., Guichard R., **Ricci A.**, Blocken B. *Wind effects on mechanically ventilated asbestos containment zone.* ICWE16 - The 16th International Conference on Wind Engineering, Florence, Italy, 27-21 Aug 2023.
7. Žužul J., Ricci A., Burlando M. *CFD reconstruction of the thunderstorm downburst event of the August 14, 2018 in Genoa (Italy).* ICWE16 - The 16th International Conference on Wind Engineering, Florence, Italy, 27-21 Aug 2023.
8. Xia L., Ricci A., Qin P., Blocken B. *Experimental and numerical analysis of aerosol concentration in a multi-zone ventilated indoor environment.* ICWE16 - The 16th International Conference on Wind Engineering, Florence, Italy, 27-21 Aug 2023.
9. Qin P., Ricci A., Blocken B. *Aerodynamic force prediction on the DrivAer car model by CFD: Impact of turbulence modeling approach.* ICWE16 - The 16th International Conference on Wind Engineering, Florence, Italy, 27-21 Aug 2023.
10. Žužul J., **Ricci A.**, Burlando M. *Simulating thunderstorm winds in complex environments using OpenFOAM.* OF2023 – The 18th OpenFOAM workshop, Genoa, Italy, 11-14 July 2023.
11. Qin P., **Ricci A.**, Blocken B. *CFD simulations of pollutant dispersion in a street canyon: impact of idealized and realistic sources.* Burgers Symposium - Conference Centre De Werelt, Lunteren, the Netherlands, 31 May – 1 June 2023.
12. Qin P., **Ricci A.**, Blocken B. *CFD simulation of pollutant dispersion in a street canyon: Impact of idealized and realistic sources.* IAQVEC2023 - The 11th International Conference on indoor air Quality, Ventilation & Energy Conservation in building, Tokyo, Japan, 20-23 May 2023.
13. Žužul J., **Ricci A.**, Burlando M. *Computational Fluid Dynamics simulations of thunderstorm downburst winds.* CCIA 2022 – The 20th conference on Engineering and Architecture, Havana city, Cuba, 28 Nov – 2 Dec 2022.
14. Žužul J., **Ricci A.**, Burlando M. *CFD simulations of extreme thunderstorm downburst winds.* The 1st CWE Workshop - Advanced modeling of stochastic Wind Effects and Vibrations, RWTH Aachen University, Germany, 26 October 2022.
15. Cosnefroy M., Qin P., **Ricci A.**, Gillmeier S., van Hoeff T., Hornikx M. *A database of scale model measurements for urban sound propagation in a moving atmosphere and first comparisons with simulations.* The 24th International Congress on Acoustic - ICA 2022, Gyeongju, South Korea, 24-28 October 2022.
16. Radhakrishnan Jayakumari A.K., Gillmeier S., **Ricci A.**, Guichard R., Blocken B. *Geometrical scaling effects on experimentally obtained external pressure measurements on an idealized building.* The 8th European and African Conference on Wind Engineering - 8EACWE, Bucharest, Romania, 20-23 September 2022.

17. Žužul J., **Ricci A.**, Burlando M. *LES simulations of a downburst immersed in an ABL-like wind*. The 8th European and African Conference on Wind Engineering - 8EACWE, Bucharest, Romania, 20-23 September 2022.
18. **Ricci A.**, Blocken B. *Prediction of wind flow in seaport areas and wind forces assessment on port infrastructures*. The 17th Conference of the Italian Association for Wind Engineering - In-Vento 2022, Politecnico di Milano, Italy, 4-7 September 2022.
19. Žužul J., **Ricci A.**, Burlando M. *LES simulations of an experimentally-produced inclined downburst: implications of a storm motion*. The 17th Conference of the Italian Association for Wind Engineering - In-Vento 2022, Politecnico di Milano, Italy, 4-7 September 2022.
20. **Ricci A.**, Blocken B. *Characterization of wind in seaports and waterways through field measurements and CFD simulations*. The 5th International conference on building energy and environment - COBEE 2022, Concordia University, Montreal, Canada, 25-29 July 2022.
21. Blocken B., Malizia F., van Druenen T., Van Gael B., **Ricci A.**, Xia L., Qin P., Kang L., van Hooff T. *An experimental and numerical study of football stadium ventilation to reduce aerosol concentrations and COVID-19 transmission*. The 5th International conference on building energy and environment - COBEE 2022, Concordia University, Montreal, Canada, 25-29 July 2022.
22. Xia L., **Ricci A.**, Blocken B. *Analysis of aerosol concentration in the players dressing room of the Johan Cruyff Arena Stadium of Amsterdam*. The 5th International conference on building energy and environment - COBEE 2022, Concordia University, Montreal, Canada, 25-29 July 2022.
23. Qin P., **Ricci A.**, Blocken B. *CFD simulations of pollutant dispersion in a street canyon: Impact of ideal versus realistic source emissions*. The 5th International conference on building energy and environment - COBEE 2022, Concordia University, Montreal, Canada, 25-29 July 2022.
24. Radhakrishnan Jayakumari A.K., Guihard R., Gillmeier S., **Ricci A.**, Blocken B. *Design and Scaling Methodology for Experimental Analysis of Wind Effects on Performance of Mechanical Ventilation System for Asbestos Abatement*. The 13th International Industrial Ventilation Conference for Contaminant Control - Ventilation 2022, Toronto, Canada, 22-24 June 2022.
25. Blocken B., van Druenen T., Malizia F., Gillmeier S., **Ricci A.** *Impact of javelin point geometry on aerodynamic performance and flight distance*. The Engineering of Sport 14 - ISEA 2022, Purdue University, West Lafayette, Indiana, USA, 6-10 June 2022.
26. Xia L., **Ricci A.**, Qin P., Blocken B. *The efficiency of mechanical ventilation system and air cleaning to reduce the aerosol concentration in indoor spaces*. Burgers Symposium - Conference Centre De Werelt, Lunteren the Netherlands, 8-9 June 2022.
27. Qin P., **Ricci A.**, Blocken B. *3D RANS simulations on the DrivAer car model: the impact of computational grid parameters*. Burgers Symposium - Conference Centre De Werelt, Lunteren, the Netherlands, 8-9 June 2022.
28. Žužul J., **Ricci A.**, Burlando M., Blocken B., Solari G. *Characterization of experimentally produced isolated downburst winds by Large Eddy Simulations*. The 14th Americas Conference on Wind Engineering, National Wind Institute - ACWE 2022, Texas Tech University, Lubbock TX, USA, 17-19 May 2022.
29. **Ricci A.**, Blocken B. *Characterization of wind in seaports for load prediction on ships and port infrastructures*. The 14th Americas Conference on Wind Engineering, National Wind Institute - ACWE 2022, Texas Tech University, Lubbock TX, USA, 17-19 May 2022.
30. **Ricci A.**, Guasco M., Caboni F., Orlanno M., Repetto M.P., Giachetta A. *Wind comfort assessment of a newly designed tower with a vertical green park*. The 14th Americas Conference on Wind Engineering, National Wind Institute - ACWE 2022, Texas Tech University, Lubbock TX, USA, 17-19 May 2022.
31. **Ricci A.**, Burlando M., Repetto M.P. *On the applicability of CFD microscale models for downscaling the wind measured above an urban area into the canopy layer*. The 14th Americas Conference on Wind Engineering, National Wind Institute - ACWE 2022, Texas Tech University, Lubbock TX, USA, 17-19 May 2022.
32. Qin P., **Ricci A.**, Blocken B. *3D steady RANS simulations on the DriVear car model: The impact of the computational grid parameters*. The 56th International Conference on Applied Aerodynamics - AERO2022, Toulouse, France, 20-30 March 2022.
33. Xia L., **Ricci A.**, Qin P., Blocken B. *Using ventilation and air cleaning to reduce the aerosol concentration in a laboratory room*. The 56th International Conference on Applied Aerodynamics - AERO2022, Toulouse, France, 20-30 March 2022.

34. Gillmeier S., **Ricci A.**, Blocken B. *Simulating approach flows similar to the atmospheric boundary layer in a newly built atmospheric boundary layer wind tunnel*. PHYSMOD 2019 - International Workshop on Physical Modeling of Flow and Dispersion Phenomena, Hong Kong, 26-28 August 2019.
35. Radhakrishnan Jayakumari A.K., Guihard R., **Ricci A.**, Gillmeier S., Blocken B. *Wind effects on pollutant containment zone in an asbestos removal worksite – field measurements*. PHYSMOD 2019 - International Workshop on Physical Modeling of Flow and Dispersion Phenomena, Hong Kong, 26-28 August 2019.
36. Žužul J., Burlando M., Solari G., Blocken B., **Ricci A.** *Comparison between the Impinging Jet Model and Experimental Stationary Downbursts*. ICWE15 - the 15th International Conference on Wind Engineering, Beijing, China, 1-6 September 2019.
37. **Ricci A.**, Vasaturo R., Blocken B. *A software application to predict local scale wind conditions in the Port of Amsterdam*. ICWE15 - the 15th International Conference on Wind Engineering, Beijing, China, 1-6 September 2019.
38. **Ricci A.**, Burlando M., Repetto M.P., Blocken B. *Full-scale and reduced-scale 3D RANS simulations for the case study of Livorno city (Italy)*. ICWE15 – 15.
39. **Ricci A.**, Burlando M., Repetto M.P., Blocken B. *Simulation of urban boundary and canopy layer flows in port areas induced by different marine boundary layer inflow conditions*. Plenary Session by Junior Staff Member. Burgers Symposium - Conference Centre De Werelt, Lunteren, the Netherlands, 21-22 June 2019.
40. **Ricci A.**, Blocken B. *Experimental and Computational analysis of microscale wind conditions in the Port of Amsterdam*. In-Vento 2018 – the 15th Conference of the Italian Association for Wind Engineering, Napoli, Italy, 9-12 September 2018.
41. **Ricci A.**, Burlando M., Repetto M.P. *Application of CFD and mass-consistent models for operational wind forecasting*. CWE 2018 – the 7th International Symposium on Computational Wind Engineering, Seoul, South Korea, 18-22 June 2018.
42. **Ricci A.**, Blocken B. *Wind environmental conditions in the largest sea vault in the world*. Burgers Symposium - Conference Centre De Werelt, Lunteren, the Netherlands, 6-7 June 2018.
43. **Ricci A.**, Freda A., Repetto M.P., Burlando M., Blocken B. *Urban comfort evaluation in an Italian historical district: the impact of architectural details in wind tunnel and CFD analysis*. URBANCEQ-2017 – the 1st International Conference on Urban Comfort and Environmental Quality, Genova, Italy, 28-29 September 2017.
44. **Ricci A.**, Burlando M., Repetto M.P., Kalkman I.M., Blocken B. *Sensitivity test of different inflow conditions for CFD simulations of wind flow in urban areas*. EACWE 2017 – the 7th European and African Conference on Wind Engineering, Liege, Belgium, 4-7 July 2017.
45. **Ricci A.**, Kalkman I.M., Blocken B., Burlando M., Freda A., Repetto M.P. *Impact of model parameters in RANS modeling of urban wind flow: the case study of Livorno city*. In-Vento 2016 – the 14th Conference of the Italian Association for Wind Engineering, Terni, Italy, 25-28 September 2016.
46. **Ricci A.**, Kalkman I.M., Blocken B., Burlando M., Freda A., Repetto M.P. *Inflow condition sensitivity in the CFD simulation of wind flow in the urban environment*. BBAA VIII – 8th International Colloquium on Bluff Body Aerodynamics and Applications, North-eastern University, Boston, Massachusetts, USA, 7-11 June 2016.
47. **Ricci A.**, Kalkman I.M., Blocken B., Repetto M.P., Burlando M., Freda A. *Local-scale forcing effects on wind flows in an urban environment*. PHYSMOD 2015 - International Workshop on Physical Modeling of Flow and Dispersion Phenomena, Zurich, Switzerland, 7-9 September 2015.
48. **Ricci A.**, Burlando M., Repetto M.P., Freda A. *Experimental and numerical investigation of the urban boundary layer in Livorno city*. ICWE14 - the 14th International Conference of Wind Engineering, Porto Alegre, Brazil, 21-26 June 2015.
49. Repetto M.P., Freda A., Fia M., Rebuffo E., Burlando M., **Ricci A.** *Wind tunnel study on urban wind flow*. In-Vento 2014 – the 13th Conference of the Italian Association for Wind Engineering, Genova, Italy, 22-25 June 2014.
50. **Ricci A.**, Burlando M., Repetto M.P., Freda A. *Wind flow modelling in urban areas: the case of Livorno city*. EEBP7 – the 7th International Symposium on Environmental Effects on Buildings and People, Actions, Influences, Interactions, Discomfort, Cracow, Polonia, 20-22 October 2014.
51. Burlando M., Repetto M.P., Freda A., **Ricci A.** *Wind tunnel and CFD models of a vertical axis wind turbine with power augmentation guide vanes*. CWE2014 – the 6th International Symposium on Computational Wind Engineering, Hamburg, Germany, 8-12 June 2014.
52. **Ricci A.** *Short introduction about the PhD research project*. Urban Physics Autumn School 2013. An international specialized workshop for doctoral students and postdoctoral researchers. Nikiti Calcidica, Greece, 13-18 October 2013.

Awards and Gratifications

23-09-2022: *Giovanni Solari Award for Research Innovation* received by Dr. Žužul Josip at the 8th European African Conference on Wind Engineering, Bucharest, Romania, with the paper:

Žužul J., Ricci A., Burlando M. *LES simulations of a downburst immersed in an ABL-like wind.*

Amount: 400 USD

10-2021: *Computational resources* on the national Dutch supercomputer *Snellius* (SURFsara), granted by the NWO Exacte en Natuurwetenschappen (Netherlands), for the project *CFD analysis of aerosol and gas dispersion in indoor and outdoor environments* (2021/ENW/01158585).

Amount: 12,829,390 CPU SBU (1 SBU = 1 system billing unit)

Main applicant: Dr. T. van Hooff

05-2021: *Senior research fellowship* funded (success rate 2020: 19.7%) by Fonds voor Wetenschappelijk Onderzoek - Vlaanderen (FWO) – hosting institution KUL (Belgium) - for the project *The impact of atmospheric winds on complex seaport areas and ships.*

Success rate of senior FWO postdoctoral applications in 2020: 19.7%

03-2021: *Seal of Excellence* for the project *SafeSeaPorts, Wind flow and force prediction on ships and infrastructures for Safe Sea Port management* (No. 101032952). Certificate delivered by European Commission, as the institution managing Horizon 2020, the EU Framework Programme for Research and Innovation 2014-2020 - Marie Skłodowska - Curie actions - call H2020-MSCA-IF-2020.

Success rate of MSCA-IF-2020 applications: 14.4%

02-2021: *Gratification* by the Department of the Built Environment, Building Physics and Services of TU/e, for the research work carried out in 2020- 2021 within the framework of Covid-19 projects supervised by Prof. Bert Blocken.

Amount: 500 euro

09-2018: *Computational resources* on the national Dutch supercomputer *Cartesius* (SURFsara), granted by the NWO Exacte en Natuurwetenschappen (Netherlands), for the project *CFD analysis of the urban heat island effect and the effect of adaptation measures* (2018/ENW/OO515311).

Amount: 8,554,951 CPU SBU (1 SBU = 1 system billing unit)

Main applicant: Dr. T. van Hooff

04-2015: *Scholarship* of 6 months for the *CFD simulations of wind flows in urban and seaport areas.* Scholarship funded within the framework of the European projects *Wind and Ports* and *Wind, Ports and Sea* (Grant no. B82F13000100005).

Amount: 9,000 euro

01-2012: *Scholarship* of 3 years, funded by Ministero dell'Università e della Ricerca (MuR), for the PhD in Structural and Geotechnical Engineering at the Department of Civil, Chemical and Geotechnical Engineering, UniGe (Italy).

Amount: 13,638.47 euro (per year)

07-2006: *Erasmus Socrates scholarship* for an international visiting of one year at the Polytechnic School of Valencia (Spain).

Amount: 5,600 euro