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INTERNATIONAL ADVANCED SCHOOL ON THUNDERSTORM OUTFLOWS AND THEIR IMPACT ON STRUCTURES

GENOA, ITALY

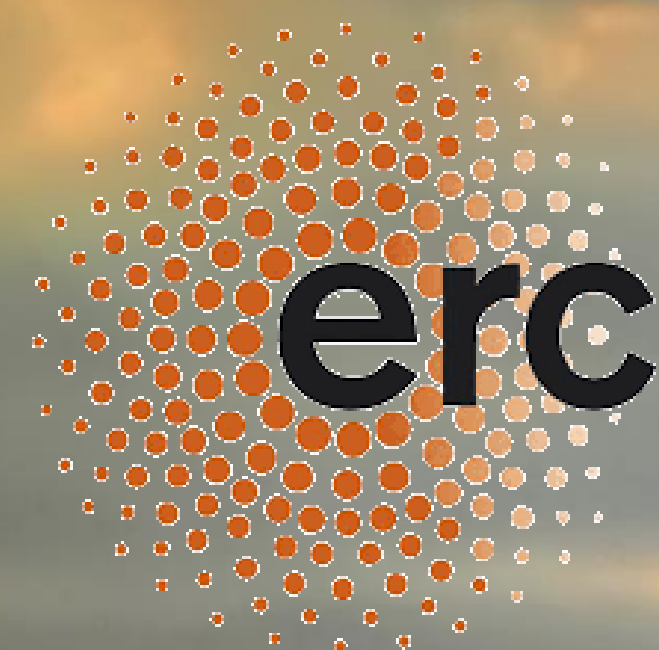
OCT 4-6, 2021

WORKSHOP

NEW FRONTIERS ON THUNDERSTORM OUTFLOWS AND THEIR IMPACT ON STRUCTURES

GENOA, ITALY

OCT 7-8, 2021



IAS ON THUNDERSTORM OUTFLOWS AND THEIR IMPACT ON STRUCTURES

MONDAY 04/10/2021

9:00-9:50 Course Introduction and THUNDERR Project
Maria Pia Repetto - Università di Genova, Italy
10:00-10:45 Wind monitoring and thunderstorm detection
Massimiliano Burlando - Università di Genova, Italy
11:05-11:50 Downburst modelling and signal analysis
Massimiliano Burlando - Università di Genova, Italy
12:00-12:50 Monte Carlo simulation of wind velocity fields
Ahsan Kareem - University of Notre Dame, USA
14:00-15:45 Fundamentals of CFD simulations
Bert Blocken - TU/e Eindhoven, The Netherlands
16:05-17:50 CFD simulation of downbursts
Leigh Orf - University of Wisconsin-Madison, USA

TUESDAY 05/10/2021

9:00-9:50 Synoptic and mesoscale meteorology
Uwe Ulbrich - Freie Universität, Berlin, Germany
10:00-10:45 Windstorms and climate changes
Uwe Ulbrich - Freie Universität, Berlin, Germany
11:00-12:50 Fundamentals of bluff-body aerodynamics
Guido Buresti - Università di Pisa, Italy
14:00-15:45 Laboratory simulation of downbursts
Horia Hangan - University of Western Ontario, Canada
16:05-17:50 Downburst wind loading of structures
Frank Lombardo - University of Illinois at Urbana-Champaign, USA

WEDNESDAY 06/10/2021

9:00-10:45 Damage to buildings and structures by severe local storms and wind speed estimations
Yukio Tamura - Chongqing University, China
11:05-11:50 Thunderstorm response spectrum technique
Maria Pia Repetto - Università di Genova, Italy
12:00-12:50 Gust front factor technique
Ahsan Kareem - University of Notre Dame, USA
14:00-15:45 Thunderstorms and transmission lines
Ashraf El Damatty - University of Western Ontario, Canada
16:05-16:50 Non-synoptic winds on buildings: wind standards and codes of practice perspectives
Ted Stathopoulos - Concordia University, Montreal, Canada
17:00-17:50 Perspectives of research on the effects of non-synoptic winds on buildings
Ted Stathopoulos - Concordia University, Montreal, Canada

NEW FRONTIERS IN RESEARCH OF THUNDERSTORM OUTFLOWS AND THEIR IMPACT ON STRUCTURES

THURSDAY 07/10/2021

Modelling of surface winds in severe convective storms

9:10-9:30 Classification, generation and synthesis of thunderstorm outflows
Teng Wu - University at Buffalo, USA
9:30-9:50 Nonstationary typhoon winds and their impact on long-span bridges
You-Lin Xu - The Hong Kong Polytechnic University, Hong Kong
9:50-10:10 Investigations into the role of outflow transience and boundary layer structure ...
Matthew Mason - The University of Queensland, Australia
10:10-10:30 A complete physical characterization of impinging-jet downburst-like winds ...
Federico Canepa - University of Genova, Italy
11:00-11:20 Large eddy simulations of experimentally-produced downburst wind
Josip Zuzul - University of Genova, Italy
11:20-11:40 Downburst wind field analytical modelling through global optimisation techniques
Andi Xhelaj - University of Genova, Italy
11:40-12:00 The physical simulation of non-synoptic wind loading - state of the art and future pathways
Mike Jesson - University of Birmingham, UK
12:00-12:20 Modeling and simulation of thunderstorm outflows
Massimiliano Gioffrè - University of Perugia, Italy

Full-scale measurement and damage assessment of severe convective storms

14:10-14:30 A study of nocturnal thunderstorm outflow
Djordje Romanic - McGill University, Canada
14:30-14:50 Tornadoes in Italy: climatology and numerical simulations
Mario Marcello Miglietta - National Research Council, Italy
14:50-15:10 Damage assessments of tornadic winds in Europe: the International Fujita scale
Peter Groenemeijer - European Severe Storms Laboratory, Germany
15:10-15:30 Resilience of structural systems damaged by thunderstorm wind hazards
Luca Caracoglia - Northeastern University, USA

Aerodynamics & response of structures to nonstationary winds

16:00-16:20 Large-Scale Experimental Simulation of Downburst Flow and Wind Loading on Structures
Amal Elawady - Florida International University, USA
16:20-16:40 Nonstationary wind load effects of tall buildings: aeroelastic effect and base isolation
Xinzhong Chen - Texas Tech University, USA
16:40-17:00 A simplified impulse load model for assessing structural response from thunderstorm outflows
Chris Letchford - Rensselaer Polytechnic Institute, USA
17:00-17:20 Developing Thunderstorm Design Wind Speed Map for Ontario ...
Haitham Aboshosha - Ryerson University, Canada

FRIDAY 08/10/2021

Aerodynamics & response of structures to nonstationary winds

9:10-9:30 The introduction of the multiple-fan wind tunnel and its application examples
Yuan-Lung Lo - National Taipei University of Technology, Taiwan
9:30-9:50 Nonstationary winds: characterization, simulation and response analysis
Guoqing Huang - Chongqing University, China
9:50-10:10 Evolutionary spectral model for thunderstorm outflows and application ...
Luca Roncallo - University of Genova, Italy
10:10-10:30 On the dynamic response of slender structures subjected to thunderstorm outflows ...
Stefano Brusco - University of Genova, Italy

Wind hazard and codification

11:00-11:20 Toward the codification of thunderstorm/downburst winds
Dae Kun Kwon - University of Notre Dame, USA
11:20-11:40 Wind and Structural Monitoring System for a Telecommunication Lattice Tower
Ileana Calotescu - Technical University of Civil Engineering Bucharest, Romania
11:40-12:00 Post-event survey and damage analysis of an intense thunderstorm in Sannicolau Mare
Li Xiao - University of Genova, Italy