

# TURBWIND 2018

Research and Innovation on Wind Energy  
Exploitation in Urban Environment Colloquium  
Riva del Garda | Italy | September 6-7



UNIVERSITY OF TRENTO - Italy  
Department of Civil, Environmental  
and Mechanical Engineering

## Thursday | September 6th, 2018 | 13.30 - 18.30

13:30 - 14:00	Registration
14:00 - 14:15	Welcome: L. Battisti (chair)
14:15 - 14:45	<b>Lecture on Urban Wind Energy research in relation to the EU2050 targets</b> G. van Bussel Delft University of Technology (NL)
14:45 - 15:05	<b>The IEA Wind Task 27</b> I. Cruz CIEMAT, Wind Advisors Team WAT, ES
15:05 - 15:30	<b>Analytical formulation of body forces in actuator disc computations of wind turbines</b> J. N. Sørensen Technical University of Denmark
15:30 - 16:00	<b>Installation of a small building-mounted wind turbine: a case study from idea to implementation</b> Q. Deltenre and M. Runacres Vrije Universiteit Brussel (Belgium)
16:00 - 16:30	Coffee break
16:30 - 17:00	<b>Assessment of the impact of a low-rise flat roofed building on ambient wind conditions</b> S. Hübl, M. Peppoloni, K. Leonhartsberger and A. Hirschl University of Applied Sciences (Austria)
17:00 - 17:30	<b>Wind regimes in urban environments: Experimental comparison with the IEC 61400.2 – 2013 open terrain wind model</b> M. Iftekharul Rakib, S. Nay, S. Evans and P. Clausen University of Newcastle (Australia)
17:30 - 18:00	<b>Numerical Simulation and Measurement for location optimization of a Vertical Axis Wind Turbine (VAWT)</b> G. Ruffino 1, D. Lehser-Pfeffermann 1, F. U. Rückert 1, T. Müller 2, F. Joos 3 1 University of Saarbrücken (Germany)   2 University of Würzburg-Schweinfurt (Germany)   3 Universität der Bundeswehr Hamburg (Germany)
18:00 - 18.30	<b>Evaluation of the influencing quantities of vibration and oscillation of small wind turbines (SWT) and its reduction</b> A. Hirschl, M. Peppoloni and K. Leonhartsberger University of Applied Sciences (Austria)

## Friday | September 7th, 2018 | 09.00 - 18.30

09:00 - 09:30	<b>Experimental characterization of VAWT airfoils for urban environments</b> A. Carbó Molina 1,2, S. Van de Maele 2, G. Bartoli 1, T. De Troyer 2 and M. Runacres 2 1 Università degli Studi di Firenze (Italy)   2 Vrije Universiteit Brussel (Belgium)
09:30 - 10:00	<b>A preliminary assessment of the impact of gurney flaps on the aerodynamic performance augmentation of Darrieus wind turbines</b> F. Balduzzi, D. Di Rosa, G. Ferrara, A. Bianchini Università degli Studi di Firenze (Italy)
10:00 - 10:30	<b>A detailed analysis of the Centrifugal Pumping Phenomenon in HAWTs through the use of CFD models</b> M. Stefano 1, R. Lanzafame 1, M. Messina 1, S. Brusca 2 1 University of Catania (Italy)   2 University of Messina (Italy)
10:30 - 11:00	Coffee break
11:00 - 11:30	<b>Experimental investigation into the aerodynamic performance of ducted wind turbines</b> J. Tang and G.J.W. Van Bussel Delft University of Technology (The Netherlands)
11:30 - 12:00	<b>Dynamic identification of a Vertical Axis Wind Turbine</b> L. Pagnini, G. Piccardo, M.P. Repetto and G. Riotta University of Genova (Italy)
12:00 - 12:30	<b>Experimental assessment of an ACL simulation tool for VAWTs</b> P.F. Melani, P. Schito, G. Persico Politecnico di Milano (Italy)
12:30 - 14:00	Lunch break
14:00 - 14:30	<b>The effect of tail fin size on the yaw performance of small wind turbines operating in unsteady flow</b> D. Bradney, S. Evans and P. Clausen University of Newcastle (Australia)
14:30 - 15:00	<b>Analyzing unsteady dynamic behaviour of a small wind turbine for urban applications</b> E. Castellani, F. Berno, M. Becchetti and D. Astolfi University of Perugia (Italy)
15:00 - 15:30	<b>Measuring the torque and thrust loading on the blades of a small horizontal axis wind turbine operating in highly turbulent flow regimes</b> S. M. Nay and P. D. Clausen University of Newcastle (Australia)
15:30 - 16:00	Coffee break
16:00 - 16:30	<b>Structural Optimisation of 3D Printed Small Diffuser Augmented Wind Turbine Blade Using Bi-Directional Evolutionary Layout Optimisation Method</b> M. S. P. da Costa, J. Kesby and P. D. Clausen University of Newcastle (Australia)
16:30 - 17:00	<b>Effectiveness of wind turbines in urban environment</b> L. Battisti, S. Dell'Anna, M. Raciti Castelli, A. Brighenti University of Trento (Italy)
17:10 - 17:15	Closing: L. Battisti (chair)