



UNIVERSITÀ DEGLI STUDI
DI TRENTO

Dipartimento di Ingegneria Civile,
Ambientale e Meccanica



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AVVISO DI SEMINARIO

Si comunica che **venerdì 18 maggio 2018 a partire dalle ore 10.00**
si terrà presso l'aula **R2** (via Mesiano 77) il seguente seminario

Detection, simulation, modelling and loading of thunderstorm outflows to design wind-safer and cost-efficient structures

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Wind actions are crucial for the safety and cost of structures. The wind climate of Europe and of many other parts of the world is dominated by synoptic extra-tropical cyclones and mesoscale thunderstorm outflows. Thunderstorms are frequent events causing wind speeds often higher than cyclones.

Despite an impressive amount of research, there is not yet a model of thunderstorm outflows and their actions on structures like the one developed over half a century ago for cyclones. This happens because the complexity of thunderstorms makes it difficult to develop realistic and simple models. Their short duration and small size make available a limited data. There is a wide persistent gap between research in wind engineering and atmospheric sciences.

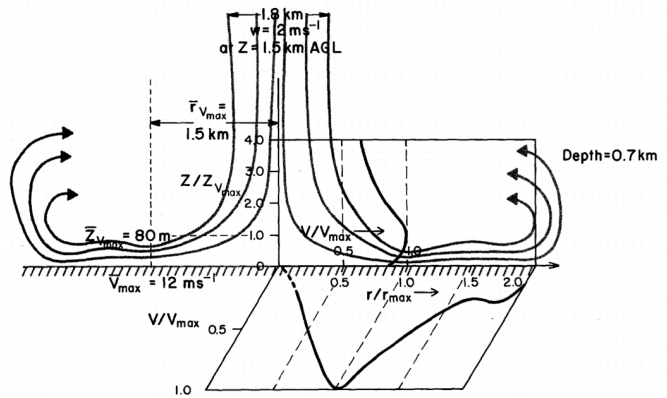
This presentation describes the realization of an extensive wind monitoring network including unique devices, the creation of an unprecedented dataset of transient wind speed records, the implementation of a broad spectrum of tools to elaborate systematically this data and to extract their properties relevant to the wind loading of structures, the development or planning of wind tunnel tests, CFD simulations, weather studies and damage surveys, aiming to integrate the information provided by full-scale measurements.

Based on these premises a new generation of wind loading models is being developed – response spectrum technique, hybrid simulation and time-domain integrations, evolutionary spectra and non-stationary random dynamics - aiming to be coherent with measured data and intrinsically coherent with each other. All these studies are being carried out with the aim of producing outcomes physically correct, transferable to design and standards, suitable to modify the existing wind loading format and to make construction wind-safer and cost-efficient.



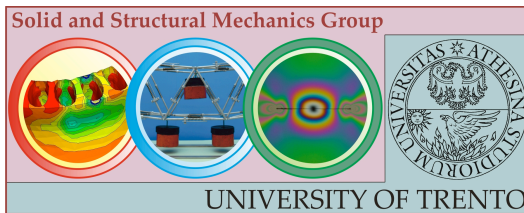
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Tutti gli interessati sono invitati a partecipare.

Il seminario è organizzato dal gruppo di Scienza delle Costruzioni
(D. Bigoni, L. Deseri, N. Pugno, A. Piccolroaz, F. Dal Corso, M.F. Pantano, R. Springhetti, D. Misseroni)



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