"THUNDERR" (G. Solari Memorial session)

Summary outline:
Europe and many countries in the world are exposed to thunderstorms hazard and their effects. Thunderstorms are complex and devastating phenomena which induce actions with different characteristics, often much more intense, than cyclonic events in the mid latitudes. Despite this awareness and a huge amount of research in this field, there is no unitary model of thunderstorms and their actions on structures, similar to that established over half a century ago for extra-tropical cyclones. Therefore, a gap between atmospheric sciences and wind engineering exists. It is worth mentioning that the intrinsic complexity of thunderstorm outflows makes it difficult to set realistic and simple models; moreover, their short duration and small size (usually a few kilometres) limit the number of available full-scale measures.

Awarded by the European Research Council (ERC) to Prof. Giovanni Solari by means of an Advanced Grant, the project THUNDERR addressed the "Detection, simulation, modelling and loading of thunderstorm outflows to design wind-safer and cost-efficient structures". Although the premature passing of Giovanni Solari, the project had a strong impact on the scientific community, inspiring many people around the world and giving a new identity to the international researchers working on this topic.

The proposed session is intended to celebrate the memory of Prof. Giovanni Solari, gathering contributions and stimulating the discussion among the most recognized scientists and many young promising researchers working in the fields of atmospheric physics, meteorology and wind engineering, on the topics of measurement, comprehension, simulation and modelling of thunderstorm outflows and the analysis of their effects on structures and structural elements.

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