



Advances in Civil Engineering

Special Issue on
Wind Engineering Science for Resilient, Smart, and Sustainable Infrastructure

CALL FOR PAPERS

From a civil engineering perspective, wind engineering science is very important due to the impacts of wind on human, manmade structures, and the environment at large. Indeed wind has significant social and economic impacts that should be considered when retrofitting or building resilient infrastructure in a sustainable way. Wind engineering analyzes the effects of wind on natural and built environments and studies the possible damage, inconvenience, or benefits which may result from wind. As a discipline, it draws upon meteorology, fluid dynamics, mechanics, geographic information systems, and a number of specialist engineering disciplines, including aerodynamics and structural dynamics. In addition, atmospheric boundary-layer (ABL) simulation at a relatively high resolution (wind structure and turbulence) is essential for wind/structural engineering disciplines. Consequently, the physics involved in the ABL are indispensable for the understanding of wind impact on the built environment and the response of the infrastructure to extreme wind events. To model these physics, several tools are available for wind engineering investigations that include atmospheric models, wind tunnels, open-jet facilities, and computational fluid dynamics (CFD) models.

In this special journal issue, we solicit high quality, original research articles as well as review articles focused on the state-of-the-art techniques and methods employed in ABL processes for wind engineering of civil engineering structures.

Potential topics include, but are not limited to:

- ▶ Importance of wind engineering science from a civil engineering perspective, as per its social and economic impacts
- ▶ Boundary-layer wind tunnels, open-jet simulators, and computational and/or theoretical methods for wind load processes
- ▶ Nonsynoptic wind processes: tornadoes, downbursts, and so forth
- ▶ Vibration mitigation in flexible structures for improved resilience and performance under wind loads
- ▶ Aerodynamic optimization for improved sustainability with resilience benefits

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/ace/ssi/>.

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