Oral Sessions | Session

[O1-13]

State-of-the-art researchon wind related disasterrisk reduction

Sun. Nov 10, 2019 11:00 AM - 12:30 PM Room 4 (Shirakashi 1)

International Group on Wind-Related Disaster Risk Reduction

11:00 AM - 12:30 PM

[O1-13-01]State-of-the-art research on wind related disaster risk reduction

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Keywords:Observation, Damage survey, Full-scale experiment, Numerical simulation, Climate change

Wind-related disaster is the most devastating disaster around the world, causing enormous severe injury and fatality as well as economic losses. Climate change can increase the risk of damages to our built and surrounding environments, subjected to intensified tropical cyclones and other meteorological phenomena.

Over the last decades, wind engineering and related research communities have made efforts to reduce wind-related disaster risk reduction. These include diagnosis of damage process through post disaster surveys, better understanding of aerodynamic characteristics of building structures and their surrounding wind flows through wind tunnel experiments and numerical simulations, and evaluation of wind-resistant performance of building elements by experiments with partial or scaled models. These efforts were partially successful in reducing wind-induced damages. However, significant damages and losses caused by wind have yet been reported around the world. This has necessitated the research communities to direct new research agenda.

This session organizes a series of presentations on the state-of-the-art research facilitating to wind-related disaster risk reduction. The topics covered by this session range from meteorological observation technology, disaster survey, performance evaluation of infrastructure, super-high-resolution numerical simulation and future climate projection with climate models. Through the presentations and discussion that follows, the session expects to deepen the understanding of the current situation and future prediction on wind-related disasters, and to share with audience the frontier of the research on wind-related disaster risk reduction.