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An Experimental Study On Airflow In The Artificial Urban Canyon Consisting Of Temporary Buildings

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Buildings in urban areas act as important external forces with respect to the flow of the atmosphere, and generate the complex turbulent flow. In order to study about this, National Institute of Meteorological Research(NIMR) in South Korea reproduced the simplified urban canyon using temporary buildings and installed wind anemometers around the canyon to observe flow of air.
Observations were conducted in the open space of Magok redevelopment area in Seoul, South Korea. Two rectangular buildings of horizontal 35m, vertical 4m and height 7m were installed. The distance between the buildings were installed side by side to have aspect ratio of about 1:1. For flow observation, a total of 13 CSAT 3D wind anemometers were installed on the roof and inside the canyon.
Through this experiment, detailed information about the turbulence occured in the artificial canyon were collected, wind direction and wind speed changes inside the canyon according to the wind direction of the rooftop of a building were investigated. And CFD simulations using the setting of same building size were conducted and were compared with experimental results.
In this presentation, an analysis of experimental data and simulation results will be shown.