

## ドップラーライダー・ウィンドプロファイラレーダーで観測される境界層大気中の 風速擾乱

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### Wind velocity disturbances observed in atmospheric boundary layer with ground-based Doppler lidar and wind profiler radars

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Observing the atmosphere near the land surface has been increasingly important, for understanding the effect of land surface condition to the atmosphere, and clarifying turbulent processes and convection system commenced in the boundary layer, and hence for further applications such as improving forecast of the local severe weather. Recent advances of remote-sensing techniques including wind profiling radar and Doppler lidar have been enabling us to observe the 3-D structures and temporal evolution of the lower atmosphere dynamics with higher temporal resolution with larger spatial coverage than those of most of conventional techniques such as surface measurement, balloon, tower, airborne, etc.

We have been developing 2-micron infrared Doppler lidar/CO<sub>2</sub>-DIAL (called ""CO<sub>2</sub>DIWIL""") and wind profiler radars. In addition to the past lidar and radar experiments 2006-2008, a sequence of radiosonde launchings and deployment of tower observation in NICT campus, Tokyo, was conducted in February 2010. Also on a 60-m tall microwave experiment tower at NICT we have deployed 3 meteorological instruments, a supersonic anemometer, and a radiometer. Those observations give background and other conditions such as atmospheric stability, humidity and heat flux etc. of the boundary layer.