

## Dual-Doppler lidar measurements of vector wind fields at Sendai Airport

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Dual-Doppler lidar measurements were performed by the two coherent Doppler lidars of the National Institute of Information and Communications Technology (NICT) and Electronic Navigation Research Institute (ENRI) on August 22 and 23, 2006. The NICT's lidar was installed in a vehicle and stationed ~4 km east from the Pacific coast. The ENRI's lidar was stationed on the rooftop of its Iwanuma Branch ~2.5 km east from the Pacific coast.

The NICT's lidar transmits a coherent beam of 2-micro-m infrared light, at a pulse-repetition frequency (PRF) of 100 Hz, with range resolution of 180 m and maximum range of up to 10 km. The ENRI's lidar is operated at a wavelength of 1.5 micro-m, at a PRF of 4 kHz, with range resolution of 29.9 m and maximum range of up to 2.5 km.

Periodic low-elevation-angle sector/conical scans and vertical-slice scans were performed with the two lidars spaced about 1.6 km apart. The horizontal wind velocity fields near surface were retrieved from the overlapping low-elevation-angle sector/conical scans. The vertical profiles of vector horizontal wind up to 1.9km above ground level were retrieved from intersecting vertical-slice scans from the two lidars. In presentation, we discuss the algorithm that is used to retrieve vector wind fields from the dual-Doppler lidar data and present results of the preliminary dual-Doppler analyses.