Ground-based Campaigns for Sea Surface Wind and Wind Profile by Mobile Doppler Lidar

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The Atmospheric Dynamics Mission ADM-Aeolus from ESA's Earth Explorer program will launch the first spaceborne Doppler lidar in 2013 to provide global wind measurements for improving the precision of numerical weather forecast. ORSI/OUC (Ocean Remote Sensing Institute, Ocean University of China) has successfully developed a mobile Doppler lidar for 3D wind and aerosol measurements which will be used for the ground-based calibration and validation during the overpass of the spaceborne lidar.
In this year, a sea surface wind campaign was carried out during the Guangzhou 2010 Asian Games. The mobile lidar performed horizontal scans over the competition field of the sailing games and provided the data to the local meteorological station every 10 minutes. In addition, an independent height correction method for sea surface wind measurements was tested. In 2011, an intercomparison campaign of lidar and radiosonde winds is planed to be conducted in Beijing. The objective is to calibrate and validate the ground-based instrument for the coming cal/val campaign with the spaceborne Doppler lidar.