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Doppler wind lidar measurement from space

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Wind profile is fundamental in many atmospheric phenomena. About 1,300 weather stations launch radiosondes to obtain profiles of pressure, wind, temperature, and humidity. Most of the weather stations are on land, while the stations on the sea are very sparse. Spaceborne infrared and visible imagers and microwave scatterometers can make wind measurement only at a specific altitude. Weather prediction and scientific people expect the realization of a global observation system for three-dimensional wind measurements. The spaceborne Doppler lidar is one of the candidate sensors for the global wind measurements. The working group on Japanese spaceborne Doppler Lidar has been established to realize for wind measurements from space. In this presentation, we describe wind measurement with the Japanese spaceborne Doppler Lidar and the activities and goals of this working group.

Keywords: wind measurement, spaceborne lidar, Doppler lidar, global climate model, weather prediction