

Dual-Doppler-velocity-mission using cloud radar and lidar

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Dual-Doppler velocity measuring mission from space-borne cloud radar and lidar is proposed. 94GHz cloud radar and lidar with Doppler function will measure three-dimensional air motion in clouds as well as in clear sky, respectively. High spectral resolution functions at 355nm and 532nm with polarization are planned to distinguish cloud particle type and aerosols. The lidar will have multiple field of views in order to penetrate relatively thick clouds. Since the radar will have capability to observe clouds and lidar will measure aerosols, it will be a successor mission to CloudSat and CALIPSO launched in 2006 and EarthCARE satellite in 2021. The mission will also serve to construct continuous records of clouds and aerosols for climate change studies.

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