# Combined Remote Sensing of Cloud Characteristics with Surface-based Radar, Lidar, All sky Imagers over Beijing, China

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Clouds have been known as the key components of Atmospheric processes in climate, weather, and environment related issues. Owing to its highly complicated processes relating to atmospheric dynamic, macro and microphysical characteristics reveal distinct regional and seasonal features, thus observations at various typical sites are very important to quantitatively understand cloud characteristics with their functions.

In this paper, we use combined ground-based instruments, i.e. a Mie Lidar, 8 mm Doppler radar, an IR and a visible all sky imagers, and an automatic weather station, to continuously observe the clouds over Beijing. Synthetic analyses are made to derive the cloud base height, vertical structure, horizontal distribution, radiative effect, etc. About 1 year observation data are used to obtain the statistics cloud characteristic, with comparison to Satellite observation and aircraft cloud observation in this area. Main results will be given in this paper.