



VHF radar observations at Taikicho (42.5 N, 143.4 E), Japan: wind comparison and investigations on small scale waves in the lower troposphere

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The newly-installed VHF radar at Taikicho (42.5 N, 143.4 E) has provided the opportunity to study the dynamics of the troposphere. In this first report using this radar data, we have undertaken some comparison studies and an investigation on small scale waves in the lower troposphere. Comparison studies utilize other datasets including wind profiler, aeroplane, GPS sonde, radiosonde etc. These datasets were collected at the same site or nearby sites. Comparison demonstrates high degree of similarities and correlations. Particularly, the aeroplane measurements conducted over Taikicho show great similarities in strength and direction with the winds detected by the radar. It can be concluded that barring the systematic error or the spatial distance involved in other measurements there is excellent correspondence between the wind observations. Preliminary analysis of short-period waves indicates that the wave activity is dominant in the lower troposphere. Waves with periods 1-2 hours and 3-4 hours have been identified and their propagation characteristics indicate that they are gravity waves by origin. The data are now being examined for a detailed analysis by including other datasets collected from nearby sites. This will throw more light on the wave characteristics over the region. Moreover, we will be able to differentiate the generation mechanisms of these waves.