

Observation of horizontal spatial difference of wind velocities in the mesopause by the MU and MF radars

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Wind velocities in the mesopause region (80-100km altitude) are observed by the MU radar at Shigaraki (34.9N,136.1E) and the MF radars at Yamagawa (31.2N,130.6E) and Wakkanai (45.4N,141.7E) in Japan. This study is devoted to assessment of the spatial difference of the wind velocities by comparing the results obtained by the three radars. From several periods of campaign data, it was shown that the spatial difference dominated the observed wind differences between the radars rather than the precision of each radar equipment and became large with increasing distance. The influences of the wind velocity variance, tides and mean wind fields were also found. Such spatial difference should be taken into account when the different observations are compared.