

Geomagnetic Influences upon MF Radar

Winds

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For the last few years, some studies have been reported concerning the influence of geomagnetic disturbances on the wind field in the mesosphere or of lower thermosphere. The results are partly contradictory, perhaps caused by different measuring places, times, observations or evaluating methods. As the wind field in the mesosphere is markedly controlled by internal atmospheric processes (e.g. stratospheric warming events, seasonal transitions, atmosphere waves), the individual geomagnetic effects were often masked by such atmospheric variations.

Superposed-epoch analysis has been performed to the available MF radar wind data from Yamagawa (31.2N, 130.6E) and Wakkanai (45.4N, 141.7E) to look for observable response to geomagnetic activity. For the different events, all those data are added which correspond to an appointed phase of the searched behavior. A persistent effect would be seen so much the better in the mean values the more events are included, as accidental variations compensate each other.