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Interdependence of wave processes of zonal and meridional circulation of the middle atmosphere

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Abstract

The investigation of daily prevailing wind velocity variations with planetary wave time scales from 2 to 30 days are accomplished using radio meteor observations over Kazan (56N, 49E) in the height range 80-100 km and BADC UK MO data archive for heights 0-55 km (with coordinates of Kazan). Calculated coherency spectra between zonal and meridional prevailing wind velocity show the significant coherency for time scales 3-5 days and 10-30 days. Height range with significant coherency for certain frequency is larger than 7-10 km. Height profiles of the coherency phase indicate the time shift between variations of zonal and meridional winds with mentioned time scales.

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Keywords

Coherency, Planetary waves