

All-sky measurements of short period waves nightglow emissions

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Will present the results of statistical analysis of the parameters of internal gravity waves registered on the variations of emission hydroxyl molecule. Wave patterns registered infrared all-sky camera installed on the optical station Maimaga (Yakutia). Analyzed data received during the winter period 2008-2013. 118 waves were registered, most of which propagated in a westerly direction. For the wave length range from 15 - 70 km (average value is - 29km) observed horizontal phase velocity varies from 17 to 140.8 m / s (average is -57m / s) and the estimated periods are within 7-40 min (the average is - 9min). Statistical characteristics of the waves do not differ from the results of the registration of such waves at middle and low latitudes. The azimuthal distribution of the direction of wave propagation is consistent with the theory of filtering background wind waves in the middle atmosphere. Probable sources of waves are assumed to mountain ranges, located 200 km to the east of the place of observation. There are a few large values of the average wavelength and wave propagation velocity than those registered at lower latitudes. Apparently, this is due to lower energy loss and wave velocity in passing from the source to the mesosphere, although not excluded for other reasons.

It is planned to identify all-sky measurements of short period waves in the green emission recording OI (557,7 nm) in the visible wavelength of the spectrum (the height of the airglow ~96 km). Will present the results of observations at two different heights (~87 and 97 km).

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