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study of the planetary waves generation and propagation in the MLT region during different phases of the solar cycle.

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One of the important factors of atmospheric dynamics and thermal regime at heights of mesosphere-lower thermosphere is energy and momentum transfer by atmospheric planetary waves. We perform numerical modeling of the atmospheric general circulation using improved general circulation model MUAM with 56 vertical levels. This model covers altitudes from the ground to 300 km. The MUAM includes parameterization schemes of stationary planetary waves (SPWs) and normal atmospheric modes (NAMs). To parameterize NAM sources in the MUAM, additional terms to the heat balance equation are used. These terms include sets of time-dependent sinusoidal components with zonal wavenumbers 1 and 2 and periods corresponding to simulated NAMs. We perform numerical simulation of global atmospheric circulation for the initial conditions corresponding to the years of solar cycle minima and maxima.

We focus on the changes in amplitudes of SPWs and westward propagating NAMs in the atmosphere under different solar activity phases. In order to analyze the result of the numerical simulation we use calculation of planetary wave's refractivity indexes and Eliassen-Palm fluxes.

It is shown that there are significant changes in SPW amplitudes for the different solar activity. SPWs better propagate into the thermosphere at solar cycle minima due to additional waveguides at altitude about 90 km. At the altitudes higher than 100 km SPW amplitudes at low latitudes and high latitudes of the Northern hemisphere may be stronger. Amplitudes of NAM are also in most cases stronger at solar minima.