

Impact of the planetary waves on the middle atmosphere and ionosphere

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Planetary waves are crucial in coupling the lower and middle atmosphere to the MLT region and ionosphere. The waves of tropospheric origin can propagate upward with increasing amplitudes and possess the potential to alter the background winds. Also, the background neutral winds significantly influence wave propagation in the stratosphere and mesosphere. Moreover, planetary waves, with large amplitudes and vertical wavelengths, can propagate further in the ionosphere and modulate the E- and F-region dynamo electric fields. The imposed variabilities on the background winds in the MLT region are reflected in the ionospheric electron densities and thermosphere constituents. In this presentation, we will discuss the basic features of the planetary waves and their role in the atmosphere-ionosphere coupling. Also, we explore the wave coupling processes in the atmosphere-ionosphere system.

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