



Planetary waves in the ionosphere – Ground-based satellite of ionosondes

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This study will present the capability of a longitudinal chain of ionosondes at high ($\sim 60^\circ$ N) and mid ($\sim 40^\circ$ N) northern latitudes to measure planetary-wave like structures in the ionosphere. Longitudinal wave structures with wave numbers S0, S1 and S2 are extracted from the variations of the F layer density.

The planetary-wave structures observed at high latitudes appear to be related to neutral dynamics, as they are significantly correlated with planetary wave activity at lower latitudes. Some of the planetary wave activity seems to be triggered from below because it also occurs during magnetic quiet times. However, small but significant correlations at a 2-3 day lag with magnetic indices indicate that some of the observed planetary wave-like activity is triggered by geomagnetic activity. The extraction technique, results of the fitting, and comparisons between high and mid latitude ionosondes as well as with winds at lower altitudes will be presented.