Ionosphere – Thermosphere Interactions at High-Latitudes During Varying Geomagnetic Conditions

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The Earth's ionosphere thermosphere system is constantly inundated from above with particles of solar wind origin (depending on the interplanetary magnetic field orientation) and from below with gravity wave forcing. Especially during geomagnetic disturbances excess energy is brought into the ionosphere thermosphere system, which contributes to the enhancement in the strength of electric fields and to the increase in neutral gas heating. These effects result in uplift of the ionosphere, redistribution of neutrals, triggering of waves, among other effects at high latitudes. There are enhancements in energies too which need to be quantified. We will discuss the ionospheric and thermospheric signatures of such phenomena in radio and daytime optical measurements during various IMF conditions.