The Response of Neutral and Electrodynamical Variations on the Oxygen Dayglow Emissions over Low- and Mid-Latitudes

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Neutral atomic oxygen emissions emanate from various altitudes of the Earth's thermosphere. These present a powerful means of investigating the dynamical variability of the coupled nature of the ionosphere thermosphere system. We present the variations of daytime airglow emission brightness as obtained using multiple wavelength optical measurements. We will present results on the dayglow emission variability at various wavelengths obtained from low and mid latitudes and inter-compare their behavior. We will show that in comparison to the mid latitude emissions in which brightness magnitudes show a general dependence on the solar zenith angle variation, the low-latitude emissions from the upper thermosphere are convolved with electrodynamical effects in addition to those due to solar zenith angle variation. We will present such inter-comparisons for emissions that originate at different altitudes and for both magnetically quiet and disturbed conditions.