

Abstract Submitted
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Interpretation of Midlatitude Observations of Total Electron Content¹ GRAHAM OSTRANDER, MICHAEL BARTELS, HUGH GALLAGHER, Department of Physics and Astronomy, SUNY Oneonta — In October 2004, a Coherent Ionospheric Doppler Receiver (CIDR) was installed at SUNY Oneonta. The CIDR measures Doppler shifts on 150 MHz and 400 MHz signals from beacons on a series of low earth orbiting satellites as these signals transect the ionosphere. The integrated number of electrons between the satellite and the receiver (known as the total electron content, TEC) is derived from the difference in the Doppler shifts of the 150 MHz and 400 MHz signals. Observations of TEC as a function of satellite elevation angle are fit to a model of the ionosphere to infer the ionospheric electron density. In order to assess the efficacy of this technique, our results are compared to observations from the array of North American GPS receivers. The technique is then used to examine the dependence of properties of the midlatitude density trough on magnetic activity.

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