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Inter-hemisphere comparison of mid-latitude ionosphere and thermosphere

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To understand hemispheric differences in thermosphere a pair of Fabry-Perot interferometers at Millstone Hill (54N MLAT) and Palmer station (54S MLAT) were used to observed thermospheric winds. These two stations are close to be conjugate of each other. The electric fields at these two conjugate points should be similar. However, the pressure gradient and other forcings at these two locations are different. We should expect different thermospheric winds in the two hemispheres. How the ionosphere reacts to similar electric fields and different winds in the two hemispheres can be very interesting. There are ionosondes monitoring changes in the ionosphere near both locations. We plan to compare the observations with the NCAR TIEGCM model simulations to examine the thermosphere ionosphere interaction in the two hemispheres. Such inter-hemispheric comparison can lead to a better understanding of the thermosphere ionosphere interaction.