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Oral
(Student Speaker)
In this study, we present the results of validation of modeled f_o F_2 (F2 layer critical frequency) and TEC (Total Electron Content) during the solstice on the 21-24 June 2015 geomagnetic storm. The solstice storm was the second strongest geomagnetic storm of cycle 24 with minimum Dst value of -197 nT (G4 class). Both TEC and foF2 changes and percentage changes were considered in comparison with the quiet time background. Also, comparison was made between the modeled quantities and the ground-based observations of the vertical Global Navigation Satellite System TEC at the four locations selected in the low-latittude South American sector. The model's performance was quantitatively evaluated using the root mean sqaure error (RMSE) and percentage changes. An average RMSEs of TEC were calculated between ~ 5 and ~10 TECu (1 TEC Unit =1016 el/m2) whereas an average RMSEs of foF2 range from about 1 MHz to 2.5 MHz. Our results showed a dependence of the NeQuick 2 model on geomagnetic activity with RMS errors increasing with increasing dip latitude.
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