



Title : Equatorial TEC over South American sector with large longitudinal variation in magnetic declination angle

Session: S5: Low and mid latitude Aeronomy and Electrodynamics

Preferred type of presentation: Oral

Abstract:

We study the climatology of the Total Electron Content (TEC) as observed by GPS receivers over two equatorial stations in South America with large difference in magnetic declination angle, São Luís (2.33° S, 315.8°E, declination: -19o) in Brazil and Arequipa (16.5°S, 288.5°E, declination: 0.5o) in Peru. The TEC variations for three solar activity levels (high, moderate and low) have been analyzed. The TEC values recorded over São Luís are larger than those over Arequipa. The rate of increase of the TEC with intensification of the solar activity is also different at the two sites, independent of the season and local time. One of the main aims of the present work is to investigate the longitudinal differences in the TEC values associated with the large variations in the magnetic declination angle using the Sheffield University Plasmasphere Ionosphere Model (SUPIM). The zonal electric field effects on the TEC magnitudes over the two South America stations will be discussed.

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