

Investigation of TEC Using YOUTHSAT RaBIT Payload Data for Low Latitude Regions

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Abstract : Global Positioning System (GPS) is used for civilian and military user positioning applications. The accuracy of GPS is degrading mainly because of ionospheric error. It is very important to analyze the effects of ionosphere on the performance of satellite systems especially in the low latitude regions. These variations depend on the Total Electron Content (TEC) in the ionosphere. To investigate the variations in the atmosphere, a mini satellite known as YOUTHSAT is launched by India. This is the outcome of the collaboration between India and USSR. One of the YOUTHSAT Indian payload is RaBIT (Radio Beacon for Ionospheric Tomography). In this paper, YOUTHSAT RaBIT payload data for the three typical days of 2011 are considered. The analysis is carried out for four Indian stations. The variations of Slant TEC, elevation angle and azimuth angles are analyzed with respect to local time. The obtained results are encouraging.

Keywords : Global Positioning System (GPS), Total Electron Content (TEC), YOUTHSAT, Radio Beacon for Ionospheric Tomography (RaBIT)

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