

## TEC MODEL FROM A TWO FREQUENCY GPS RECEIVER FOR THE COLOMBIAN IONOSPHERE

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### Abstract.

Geospace physics has increasingly growth in importance in the last years. The development of new space technologies must take into account the interaction between space weather and terrestrial atmosphere. Consequently, the ionosphere is a very important zone because of its characteristics, properties and the influence in electromagnetic waves. In this paper, a model aimed to provide information related with total electron content (TEC) in ionosphere is presented. Studied data was collected from an ionospheric station based on a two frequency GPS receiver located at Bogotá, Colombia. The presented model is based on the analysis of the variation of the satellital electromagnetic waves that pass through the ionosphere. Slant TEC was calculated from pseudorange and carrier phase observables starting from Observation files. Next, using Navigation files, GPS orbits were estimated. By assuming the ionosphere as a single layer, the wave vector crosses such a layer through a piercing point. Finally, vertical projection of TEC was obtained for that point.