

A method for obtain the elevation angle dependencies of GPS receivers for TEC measurements

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Variations in ionospheric total electron contents (TEC) have been a great concern in the study of space weather. TEC can be measured by using carrier phases of both L1 and L2 signals transmitted from each GPS satellite. We can calculate TEC using the data provided from the GPS observation network, which is operated by the Geographical Survey Institute, the Ministry of Construction in Japan. Various types of GPS receivers are used in the network. Carrier phases of L1 and L2 signals vary with the elevation angle of line-of-sight from the receiver to the GPS satellite. Also these characteristics depend on the individual receivers. Here we present a method for determining the individual receiver characteristics in order to modify the TEC values.