

## Estimation of ionospheric TEC distribution using GPS signals measured by single-frequency receivers

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GPS observation network, such as the GEONET in Japan, is useful for ionospheric study, but its construction and maintenance cost is very high since it consists of many continuous monitoring stations with dual-frequency GPS receivers. It is not realistic to construct the same kind of system in the equatorial zone including Myanmar while it is desirable to observe the ionosphere from such regions. In the present study, we develop an estimation method of ionospheric TEC distributions using GPS signals measured by single-frequency receivers. Unlike the dual-frequency receiver, ionospheric effect on GPS signal, which corresponds to the total electron content along the signal path (slant TEC), should be extracted by removing other effects from the difference between real and measured distances of satellite and receiver. A two dimensional (latitude-local time) model with second order function in each dimension is adopted to represent vertical TEC distributions and its parameters are estimated by least square fitting. In the presentation, we will show the result of the developed method applied to GPS observation data and compare it with the TEC map derived from dual-frequency observations.