

## Study on the daily and seasonal variation of equatorial anomaly in Asia from satellite-ground beacon experiment

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Studies of ionospheric structures by the satellite-ground beacon experiment were conducted mainly in southeast Asia. For example, meridional chain of five beacon receivers along 100E meridian showed meridional distribution of total-electron content (TEC) of the ionosphere, and we revealed time and spatial variabilities of the equatorial anomaly in a certain period time (Watthanasangmechai et al., 2014, 2015). The data analysis was, however, not easy mainly because of difficulty in estimating bias of the measurement to get the absolute TEC. First, in this study, we made the database of latitudinal TEC distribution. We developed automatic estimation of TEC by multi steps. First step is based on combining observations from two receivers. Then the results were processed through multi-point observation method. The results of this method were confirmed to be correct by the results by Watthanasangmechai et al. (2014, 2015). Using this method, we analyzed latitude distribution of TEC from Thai to Indonesia in 2012-2015. It is valuable to measure such latitudinal distribution of TEC in the wide latitudinal range from the ground fixed sites. Using these data, we show the daily and seasonal variation of the equatorial anomaly, which occurs in the low latitude areas in Asia.

Keywords: Satellite-ground beacon experiment, Bias estimation, TEC, Equatorial anomaly