Structure of low-latitude ionospheric TEC observed by GRBR and GPS networks — Methodology and preliminary results —

Kornyanat Watthanasangmechai[1]; Mamoru Yamamoto[2]; Akinori Saito[3]
[1] RISH, Kyoto Univ.; [2] RISH, Kyoto Univ.; [3] Dept. of Geophysics, Kyoto Univ.

http://www.rish.kyoto-u.ac.jp/

To reveal the structure of the low-latitude ionosphere, the spatial variation of the Total Electron Content (TEC) was studied by using GNU Radio Beacon Receiver (GRBR) and GPS networks. The GRBR receivers are located at Kototabang (0.2040S, 100.3212E), Phuket (7.8959N, 98.3862E), Chumphon (10.7247N, 99.3744E), Bangkok (13.7307N, 100.7778E), and Chiang Mai (18.7609N, 98.9324E). The GPS stations distribute from 25N to 10S and 98E to 108E in the geographic coordinate. Data from five GRBRs and seventeen GPS stations are used in this study. Period of the study is primary March/April 2012. The GRBRs can detect latitudinal structure of TEC in high spatial resolution and wide coverage. However, estimate of the absolute TEC is not easy. On the other hand, estimate technique for absolute TEC from the GPS network is well established. To utilize advantages of both GRBR and GPS networks, we try to determine absolute TEC from the GRBRs by referring to results from the GPS network. As a result, meridional structure of the low-latitude ionosphere should be obtained with good spatial resolution and accuracy. The observation setup, methodology and preliminary results will be reported in the presentation.