

Improvement of 3D analysis of ionospheric plasma density over Japan

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Real-time monitoring of the ionospheric plasma distribution is important for the correction of the measurement errors of satellite navigation. We developed three-dimensional ionosphere tomographic analysis with GEONET data, and have started the real-time analysis since April 1, 2016. The purpose of this study is to improve this 3D tomography analysis. There are two points to be improved in this system. The first point is analysis of the whole GOENET data. The data before April 1, 2016 is not analyzed yet. We will analyze the archived GEONET data by using the supercomputer KDK at Kyoto University. Then the analysis results will be open to the public from a web page. The other point is improvement of graphic display of the tomography results. We now have four limited methods to show analysis results. To show distribution of the plasma density at different angles, we developed the vertical display along any azimuthal direction designated by a pair of horizontal locations (longitude and latitude). We plan to improve the web data service including these points.