

## Examination on the accuracy of the global core plasma model using whistler spectrograms observed by Akebono

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Ray tracing is one of the efficient methods to simulate propagation paths and characteristics of plasma waves in the ionosphere and plasmasphere. A global model which provides reasonable estimates of cold plasma density is indispensable for the ray tracing. Recently, realistic density models have been developed such as the global core plasma model (GCPM). The GCPM has an advantage in ray tracing among the models because it always provides continuous densities in both value and derivative. In the present study, we examined the accuracy of the GCPM by dispersions of whistlers observed by Akebono. The whistler dispersions in solar active years, 2000 and 2001 were compared with theoretical ones derived from the GCPM. As a result, we obtained a dispersion error map for magnetic local time and day of year. The map implies that error of the GCPM-derived density becomes large when the density is low.

Keywords: whistler, electron density distribution, Akebono satellite, Global core plasma model