

Operational Relativistic Electron Flux Forecast at GEO Satellite

Tsutomu Nagatsuma¹, Kaori Sakaguchi¹, Shinji Saito^{2*}, Kanako Seki³, Yoshizumi Miyoshi³

¹NICT, ²Nagoya Univ., ³STEL, Nagoya Univ.

Dynamic changes of the Earth's Radiation belt are one of the well-known but still unsolved issue of solar terrestrial physics. This is also important for the practical point of view because relativistic electron can penetrate into a satellite body and causes deep dielectric charging. This phenomenon is one of the major reasons of satellite anomaly. For prediction of space environment around GEO, we will proceed to develop 1) near real time prediction model of relativistic electron environment, 2) high precision global MHD simulation in this 5-year term from 2011. As for the prediction model of relativistic electron environment, we plan to develop two types of models. One is near real time prediction model based on the AR model that is a kind of the parametric analysis methods for the time-series data. The product of this model is for daily operation of geosynchronous satellite. We have prepared the web pages of this product.

The other is high time and spatial resolution numerical forecast model based on combination between global MHD simulation code and particle tracing code and others. The product of this model is for post analysis of satellite anomalies. In this presentation, we will introduce current status and future perspective of our project.

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