

ひまわり8号衛星による高エネルギー電子の観測と変動予測

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High-energy electron observations by the Himawari-8 satellite and its application to the space weather forecast

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The geostationary environmental observing satellite named Himawari-8, which was launched in October 2014, starts observation of high-energy particles by the space environment data acquisition monitor (SEDA). SEDA is equipped for the purpose of the satellite housekeeping data acquisition, which measures proton and electron fluxes at energy ranges of 15 to 100 MeV and 0.2 to 5 MeV, respectively. The quasi-realtime data has been provided from Japan Meteorological Agency (JMA) to NICT since January 2015. The electron data is significant for the nowcasting and forecasting of the Van Allen radiation belt variation at geostationary orbit (GEO) just over Japan. The numerical prediction of the flux variation can be estimated by inputting the quasi-realtime data into the multivariate autoregressive model. The forecast information must be useful for the planning of the satellite operation to mitigate the risk of the anomaly by deep-dielectric charging. In the presentation, we will show the electron flux variation during the St. Patrick storm in March 2015 and a following storm in June 2015. The hourly prediction model of the 1 MeV electron flux at the Himawari orbit and its validation result will be also introduced.