

Assimilation of GPS RO data for the JMA global model

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The status on the assimilation of Global Positioning System (GPS) Radio Occultation (RO) data at the Japan Meteorological Agency (JMA) will be presented.

JMA started the operational assimilation of Metop-A/GRAS and GRACE-A/BlackJack refractivity data in November 2009 into its global model. The utilization of COSMIC/IGOR refractivity data was additionally introduced one year after, in November 2010. The results of its impact studies which were performed for the operation showed that COSMIC data improved analysis and forecast fields of the global model, especially at the upper troposphere and lower stratosphere in tropical region. A bias correction procedure is implemented in the JMA global data assimilation system due to the existent systematic biases between GPS RO data and its global model.

At present we are investigating to use additional GPS RO refractivity data in the global data assimilation system such as TerraSAR-X/IGOR, SAC-C/BlackJack and C/NOFS/CORISS with a refined quality control process. The new process includes update of observational error setting and elimination of the bias correction procedure. The status of our ongoing development will be also presented.