

ASSIMILATION OF METOP-A AND GRACE-A GPS-RO DATA FOR JMAS GSM

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The Japan Meteorological Agency (JMA) started the assimilation of Global Positioning System (GPS) Radio Occultation (RO) data on November 30, 2009 for its operational global model. The assimilated data are Metop-A/GRAS and GRACE-A/BlackJack. Metop data are obtained from through the GTS, and GRACE-A data are received via the Internet (Wickert et al., 2005). Because there are systematic biases between GPS RO data and the first guess of JMA's global model, a bias correction procedure based on a linear regression approach was implemented. The regression coefficients are estimated using a Kalman filter for each analysis. The predictors for the bias correction are latitude, height and refractivity. Observation errors and bias correction coefficients were determined in five latitudinal bands (90-60°S, 60-20°S, 20°S- 20°N, 20-60°N and 60-90°N) independently. Observation errors were defined as a function of height. Observing system experiments for GPS refractivity data were conducted for the periods of September 2008 and January 2009 to assess the impact of GPS refractivity assimilation. As improvement of the analysis field was confirmed, Metop-A/GRAS and GRACE-A/BlackJack data were in operation. We are also trying to use COSMIC data providing from UCAR and NSPO.