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The Korea Meteorological Administration (KMA) has recently improved on more adding some satellite of GNSS-RO data in its Global Data Assimilation and Prediction System (GDAPS). KOMPSAT-5 RO data already gave a generally positive impact, and preliminary results.

The KMA has been running 1.5km resolution Local Data Assimilation and Prediction System (LDAPS) since June last year. And the XLDAPS that extend the model domain to East Asia will be operated this July. GNSS-RO is being tested in XLDAPS and its impact was evaluated.

NMSC(National Meteorological Satellite Center)/KMA receives raw signal data from several domestic agency of around 100 stations over the Korean Peninsula and generate Zenith Total Delay (ZTD) observations using Bernese software. The assimilation of preferentially 40 GNSS stations gave a positive impact on the lower tropospheric humidity field in early forecast of LDAPS, and significant improvements for heavy rainfall cases in the summer. Based on these results, ground-based 40 GNSS will be made operational XLDAPS with improved microphysics of the rain size distribution. To make more use of GNSS observations, assimilation into the XLDAPS may require some spatial correlation, and a review of the estimate of the observation error regarding quality control. The KMA also plans to assimilate ZTDs into its very short range NWP model using observations in 15 minute intervals and global NWP model.
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