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Characteristics of Typhoon Forecasts from KIM3.0

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The Korea Institute of Atmospheric Prediction Systems has been developing the global model named Korean Integrated Model (KIM) since 2011. At present, the real time forecast of KIM is being operated with the fully coupled Hybrid 4D EnVar data assimilation system. In this study, typhoon track and intensity forecasts during summer season (July $\sim$ September) of 2017 over the northwestern Pacific from the KIM version 3.0 (KIM 3.0) are evaluated and compared with those of Global Data Assimilation Prediction System (GDAPS) of Korea Meteorological Administration and verification results from Regional Specialized Meteorological Center-Tokyo and Joint Typhoon Warning Center (JTWC). Subsequently, the effect of initial field and the improvements are examined by a cold run result from the KIM version 3.1 updated in this February. The selected case for the cold run is typhoon TALIM that had the largest track and intensity errors in KIM and GDAPS among the typhoons affected to the Korean peninsula last year. The errors of KIM can be explained by differences of oceanic and atmospheric conditions between forecast and observation. To calculate forecast errors, latitude, longitude, maximum wind speed and central pressure were used from JTWC observation. Reanalysis data from National Centers for Environmental Prediction used as observation for analyzing oceanic and atmospheric fields are also used. TC information was extracted using the Geophysical Fluid Dynamics Laboratory vortex tracker. This result will contribute to the final goal of development of the KIM as providing feedback on typhoon forecasts. The details will be shown in the presentation.