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Status and Plan of Standard Verification System for the NWP model in Korea Meteorological Administration

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The Korea Meteorological Administration (KMA) has established and operated a standard verification system of the operational NWP models to evaluate the predictive performance of NWP model and compare them with other NWP models operated by domestic and foreign organization. This secures the objectivity of the verification results by applying the verification standards (WMO-No.485) presented by World Meteorological Organization (WMO), and being able to compare the performance with the numerical forecasting models of other institutions under the same conditions. The NWP models to be verified is a global, a regional, very short-range, and an ensemble prediction system and verification against analyses and observations are performed twice a day (00 UTC, 12 UTC). In addition to standard verification, precipitation, typhoon and various verification indexes (CBS index, KMA index, jumpiness index) are verified and used to evaluate the utilization of NWP models. The Korea Integrated Model (KIM), which is developed for Korea's own NWP model, has been in operation since April 2020. Since the start of operation, the RMSE of 500hPa geopotential height (in Northern Hemisphere) has decreased every year, showing that forecast performance is improving. In addition, it can be seen that the 72-hour prediction accuracy for 12-hour accumulated precipitation (1.0 mm or more) in the Korean Peninsula area (75 ASOS stations) is also improving. As such, this study intends to discuss the predictive performance of the numerical forecast model based on the standard verification system and plans to improve the verification system in the future.