

Evaluations of Real-time Forecasts of Summer Western Pacific Subtropical High in CMA Numerical Weather Prediction Center

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In this study, real-time forecasts of summer western Pacific subtropical high (WPSH) in Numerical Weather Prediction Center (NWPC) of China Meteorological Administration (CMA) is evaluated. These forecasts are real-time provided by the two weather forecasting systems in the NWPC: the global ensemble forecasting system (GEFS) based on the T639 spectral model of CMA and the global forecasting system (GFS) based on the Global/Regional Assimilation Prediction System (GRAPES) of CMA. We calculate the four main indices that feature the four main WPSH properties: the intensity, area, ridgeline latitude, and longitude of westward-extension ridge point. Our results shows that the GEFS, with 15 ensemble members, have a good job to predict the WPSH intensity and area, a relatively lower prediction skill for the WPSH ridgeline latitude, and unfortunately a non-skillful forecast of the WPSH westward-extension ridge point. We also show that compared with the ensemble forecasting, the single member forecast of the GFS tends to present a relatively lower prediction skill. The evaluations indicate that the real-time forecasts are skillful to some degree in predicting the intensity and area of WPSH within 10 lead days and the ridgeline latitude within 3 lead days, in terms of 0.5 skill score taken as a reference, and that the ensemble is quite important to improve the WPSH forecasting further.