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Poster Presentation

**A Comparison of Seasonal Hurricane Forecasts: Dynamical Model versus Dynamical–Statistical Model**

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Abstract

To support NOAA Hurricane Season Outlooks, several forecast tools have been developed at the NOAA’s Climate Prediction Center (CPC), such as the dynamical forecast from the high-resolution (T382) Climate Forecast System (CFS) and the low-resolution (T126) CFS-based hybrid dynamical–statistical forecast model, both in 2008. The former directly detects, tracks, and counts tropical storms (TS) from the circulation fields of the T382 CFS forecasts, whereas the latter uses the T126 CFS predicted seasonal large-scale circulation and sea surface temperature as predictors and the empirical relationships between the model hindcasted large-scale circulation and actual TS activity in historical records to make seasonal hurricane forecast. In this study, the hybrid model approach is applied with the T382 CFSv2 for the seasonal hurricane forecast. The forecast skill is assessed through cross-validations over the T382 CFSv2 hindcast period (1981–2010) and is compared with the T382 CFSv2 dynamical forecast, as well as the T126 CFSv2 hybrid model forecast. For the forecasts initialized in July, for example, the anomaly correlation (AC) skills of the T382 CFSv2 hybrid model are 0.54, 0.67, and 0.56, respectively, for Atlantic seasonal TS, hurricanes, and accumulated cyclone energy (ACE). The corresponding AC skills are 0.51, 0.57, and 0.56 for the T382 CFSv2 dynamical forecasts (Schemm and Long 2017) and 0.50, 0.66, and 0.61 for the T126 CFSv2 hybrid model forecasts. The forecast skills with these models for the hurricane season in the eastern North Pacific and western North Pacific basins will also be assessed.

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