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Title: Evaluation of the NCEP CFSv2 45-day Forecasts for Predictability of Intraseasonal Tropical Storm Activity

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Abstract:

Predictability of intraseasonal tropical storm (TS) activities is assessed using the 1999-2010 CFSv2 hindcast suite. Weekly TS activities in the CFSv2 45-day forecasts were determined using the TS detection and tracking method devised by Carmago and Zebiak (2002). The forecast periods are divided into weekly intervals for Week 1 through Week 6, and also the 30-day mean. The TS activities in those intervals are compared to the observed activities based on the NHC HURDAT and JTWC Best Track datasets.^M

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The CFSv2 45-day hindcast suite is made of forecast runs initialized at 00, 06, 12 and 18Z every day during the 1999 - 2010 period. For predictability evaluation, forecast TS activities are analyzed based on 20-member ensemble forecasts comprised of 45-day runs made during the most recent 5 days prior to the verification period. The forecast TS activities are evaluated in terms of the number of storms, genesis locations and storm tracks during the weekly periods. The CFSv2 forecasts are shown to have a fair level of skill in predicting the number of storms over the Atlantic Basin with the temporal correlation scores ranging from 0.73 for Week 1 forecasts to 0.63 for Week 6, and the average RMS errors ranging from 0.86 to 1.07 during the 1999-2010 hurricane season. Also, the forecast track density distribution and false alarm statistics are compiled using the hindcast analyses. ^M

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In real-time applications of the intraseasonal TS activity forecasts, the climatological TS forecast statistics will be used to make the model bias corrections in terms of the storm counts, track distribution and removal of false alarms. An operational implementation of the weekly TS activity prediction is planned for early 2014 to provide an objective input for the CPC's Global Tropical Hazards Outlooks. ^M

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