

## **Intraseasonal prediction of tropical cyclones: A comparison of dynamical and statistical predictions in the Southern Hemisphere**

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A series of 46-day hindcasts has been produced with the same configuration as the European Centre for Medium-Range Weather Forecasts (ECMWF) operational monthly forecasts. The tropical cyclones produced by the model have been tracked and their climatology is generally consistent with observations, although the dynamical model generates too many tropical cyclones. The hindcasts simulate also a realistic impact of Madden Julian Oscillation on the model tropical storm activity, which suggests that this forecasting system should have some skill to predict the intraseasonal variability of tropical cyclone activity. The skill of the ECMWF forecast system to predict the probability of occurrence of tropical cyclones (TCs) in a series of 20x15 degree domains covering the Southern Hemisphere during weekly periods has been evaluated and compared to the skill of a state-of-the-art statistical model, which uses the Madden Julian Oscillation, ENSO and the climatological seasonal cycle as predictors (Leroy and Wheeler 2008). After applying a simple calibration, the ECMWF hindcasts display higher Relative Operating Characteristic (ROC) and Brier skill scores than the statistical model for the first 3 weeks of integrations, although the statistical model remains more reliable. The dynamical model also has skill over the Indian Ocean in week 4. The multi-model combination of the calibrated dynamical forecasts with the statistical forecasts helps to improve the ECMWF forecasts, which suggests that the multi-model combination would be useful for the prediction of weekly tropical cyclone activity.