

The MJO in the ECMWF Monthly Forecasting System

A 32-day ensemble forecast is produced operationally every Thursday at ECMWF. A set of hindcasts is also produced once a week to calibrate these real-time forecasts. The skill of this system to predict the Madden Julian Oscillation is evaluated using metrics similar to those described in Wheeler and Hendon (2004). Results suggest that the fully coupled ocean-atmosphere model has some skill to predict the propagation of the MJO up to about 20 days in advance. The skill of the model to predict the MJO propagation is enhanced by improving the ocean vertical resolution and by using the latest reanalysis.

Various changes in the IFS parameterization and their impact on the MJO prediction will be discussed. Previously, the model was not able to maintain the amplitude of the MJO for more than a few days. A recent change in the ECMWF model physics allows the model to maintain the amplitude of the MJO during the 32 days of the model integrations. However, the model still has some deficiencies in propagating the MJO across the Maritime continent.