

The MJO remained active over the past week with eastward propagation becoming more clear and the enhanced convective phase is now nearing Africa. Enhanced convection was observed over parts of northern South America, central Africa, as well as areas stretching from southeast Africa northeast to the southwest Indian Ocean (IO). Strong enhanced convection continued over the south Pacific ocean. Suppressed convection stretched from the eastern Indian Ocean across Australia and portions of the Maritime continent (MC). No tropical cyclones developed during the past week. Atmospheric Kelvin wave activity is most clearly indicated across parts of the Pacific basin at the current time.

There remains considerable spread amongst the dynamical forecasts of the RMM index with the GFS, JMA, and Taiwan CWB forecasting a weakening signal with less eastward propagation, while the ECMWF and to a lesser extent the UK Metoffice and Canadian solutions favor more of a continuation of the MJO signal into the Indian Ocean during the period. Historically, the ECMWF and UK Metoffice have shown the highest forecast skill. We favor a continuation of the MJO with the enhanced convective phase shifting to the Indian ocean over the next 2 weeks. There are signs that the persistent enhanced convection across the South Pacific may begin to wane by Week-2.

The outlook is primarily based on impacts associated with the MJO and adjusted by model guidance where deemed helpful especially during Week-1. For Week-1, below-median rainfall is favored for a region spanning the southern MC, northern Australia into the southwest Pacific ocean associated with the MJO (phase 1 composites) along with consistent signatures in model guidance. Chances for above median rainfall are elevated for the south central Pacific ocean supported by MJO composites and model precipitation forecasts. Model guidance is used for favored below-median rainfall for Hawaii and northeast Brazil and above-median rainfall for portions of interior South America. An area of disturbed weather in the eastern IO is forecast by some model guidance to move west-southwest into a favorable environment for development, so a high risk of tropical cyclogenesis is shown for the south-central IO.

Uncertainty increases in Week-2, but we favor an evolution where the MJO enhanced phase enters the western Indian Ocean and above-median rainfall is favored, albeit only with moderate confidence, for southeast Africa, across Madagascar into the central IO. Tropical cyclogenesis remains favored in the south-central IO due to support from dynamical models, even though it is at odds with MJO composites. Elevated chances for below-median rainfall shift slightly east in Week-2 associated with the MJO eastward propgation and span an area from the central MC, northern Australia into the western Pacific.

Enhanced convection across the southwest Pacific continues to add uncertainty to mid-latitude impacts from this MJO, but it appears that the enhanced convection in this area may begin to decrease by Week-2. For the U.S., the MJO favors, on average, the development of a mean trough across the western U.S. near or just after mid-February suggesting elevated chances for below normal temperatures across parts of the western U.S.. As we approach the end of February, the MJO would favor on average troughing near or along the west coast and a tendency toward a mean ridge across the eastern U.S., favoring elevated chances for above-normal temperatures for portions of the east central U.S. and a more active weather pattern for the western U.S. with enhanced chances for above-median precipitation.