

The MJO remained active over the past week with the enhanced convective phase crossing the Indian Ocean (IO) and enhanced convection is becoming better organized on a large scale over the Maritime continent (MC). A robust atmospheric Kelvin wave (KW) crossed the IO and MC in recent days and has contributed to the increase in convection in this area and has effectively resulted in quick propagation of the MJO to the western MC. Enhanced convection was observed during the past week across the western Pacific and Indian Ocean, primarily north of the equator. Suppressed convection was strong over portions of the southwest Pacific and parts of Brazil. Co-location of suppressed phases of the KW and an equatorial Rossby wave (ERW) generally resulted in mixed convection over the IO. Tropical depression 2W formed Sunday 2/18 east of the Philippines and Tropical cyclone 16S developed in the Mozambique Channel. Above-median rainfall has also been observed across southeast Afrca and Madagascar.

Dynamical model forecasts of the RMM index are in agreement for some gradual eastward propagation of the MJO during the upcoming week with the enhanced convective phase centering across the MC. The models, however, also show a considerable reduction in amplitude throughtout the the period and stop eastward propagation by Week-2. Influence from other types of subseasonal tropical variability are

likely contributing to the behavior seen in the forecasts (i.e., KWs and westward moving ERW) and it is too soon to say that the MJO is weakening over the longer term. The official forecast favors a continuation of a slowly evolving MJO signal over the MC during the period.

The outlook is primarily based on impacts associated with the MJO and other types of subseasonal tropical variability, adjusted by model guidance where deemed helpful especially during Week-1. For Week-1, above median rainfall is favored for the MC, northern Australia, the Philippines and Hawaii primarily associated with the MJO and consistent with model guidance. Tropical cyclogenesis is also favored for parts of the eastern IO and waters north of Australia supported by both MJO composites and model guidance. The MJO also favors below-median rainfall for portions of west-central Africa, Brazil and an area across the south-central Pacific Ocean. Tropical cyclone 16S increases chances for above-median rainfall and high winds and seas for the Mozambique Channel, southern Madagascar and surrounding waters. Frontal activity elevates chances of above-median rainfall for parts of southern Brazil, Paraguay, Uruguay and northern Argentina.

During Week-2, enhanced convection is forecast to slowly shift eastward and includes the MC and the far western Pacific Islands. The threat for tropical development continues for waters surrounding Australia. Chances remain elevated for above (below) median rainfall for Hawaii and Brazil respectively. Enhanced odds continue for below-median rainfall for areas of south-central Africa and extending to include Madagascar during Week-2, although confidence is moderate.

The forecast tropical convection associated with the MJO in the coming weeks favors a circulation consistent with La Nina and MJO composites favor, on average, above-normal heights and elevated chances for above-normal temperatures across the eastern U.S. during the remaining of February into March. However, forecasts of the AO index and potential high latitude blocking oppose this scenario so uncertainty is high and confidence low and in fact current model guidance is not consistent with that shown in the composites. For precipitation, MJO composites on average favor elevated chances for above-median precipitation across the lower Midwest and Ohio and Tennessee Valleys. Composites indicate that impacts across the western U.S. for upcoming phases of the MJO are less clear and not statistically robust.