Understanding of uncertainties in bunch of reanalysis data sets for MJO assessment

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The Madden-Julian oscillation (MJO) is a leading mode of intra-seasonal variability, therefore advancing its simulation comparable to observations and reanalyses is the goal for improving the MJO predictability. Due to many kinds of observations and reanalysis data sets, however, MJO identification in terms of outgoing longwave radiation (OLR), zonal winds at 200 and 850hPa anomalies can lead to a certain amount of spread on its activity. This study examines uncertainties in the behavior of the MJO with bunch of available reanalysis data sets. Two component indices, RMM1 and RMM2 are quantitatively analyzed on the amplitude and phase from data sets over the period from 1979 to 2009. We also investigate hindcast results from an operational seasonal forecasting system to examine whether or not those are comparable to the observation spread in MJO behavior.