TWP-ICE: MJO Status, 22 Jan 2006

Day 2 of Experiment.

Part One: MJO Status
(Part Two, the general synoptic overview, is in a separate file)

As discussed yesterday, the MJO as diagnosed by projections on the (RMM1, RMM2) EOFs has been amplifying through the past 8-9 days, such that on the latest analyses it is projecting as a large amplitude MJO event, currently in phase 5 of the Hendon-Wheeler Phase diagrams (see Fig. 6 of yesterday's report).

Matt Wheeler, on his webpage, http://www.bom.gov.au/bmrc/clfor/cfstaff/matw/maproom/RMM/index.htm calculates empirical forecast fields of OLR and 850 hPa winds, based on seasonally varying lagged regression with RMM1 and RMM2 as predictors, shown in Fig. 1 below.

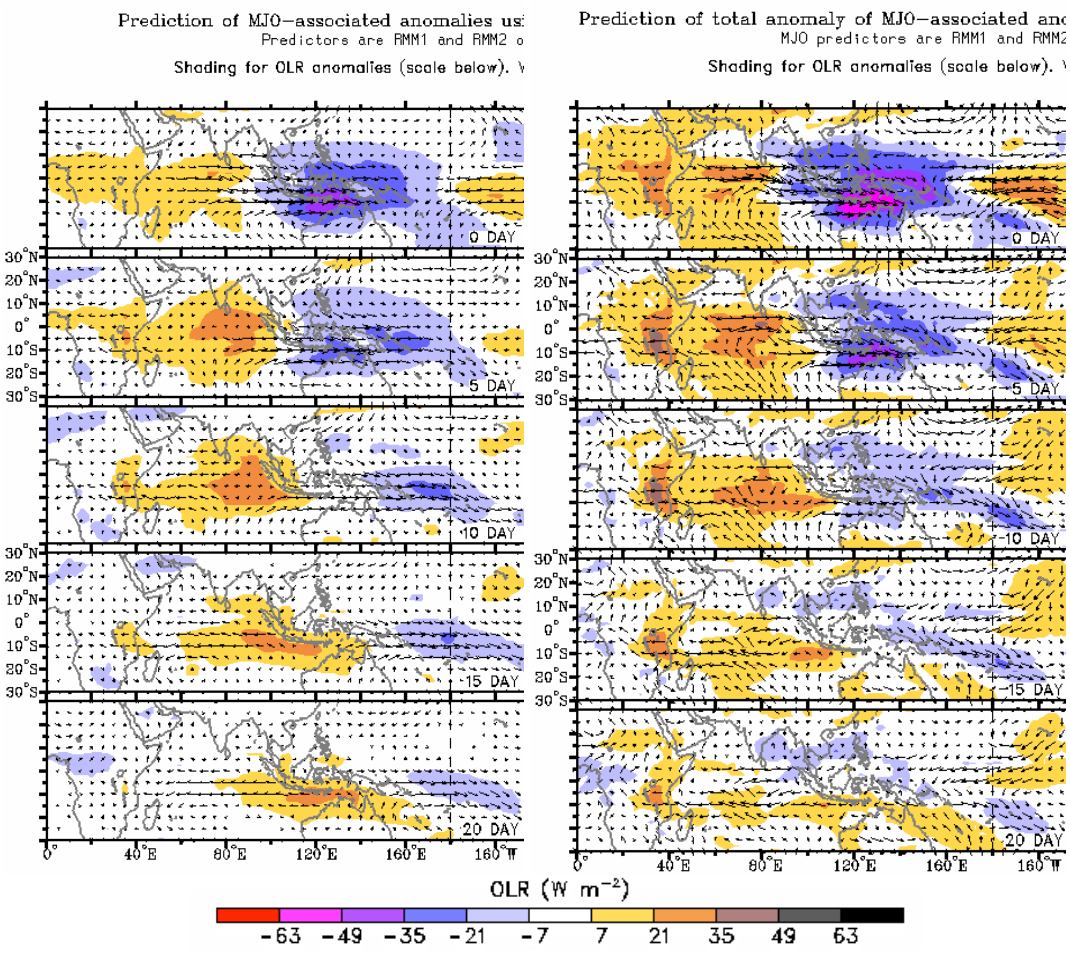

Fig. 1. (left) Prediction of MJO-associated anomalies using lagged linear regressions, and (right) prediction of the total anomaly of MJO-associated and low-frequency (>120 days) variability. In both plots, predictors are RMM1 and RMM2 on 20 Jan 2006 (0 day). Shading corresponds to OLR anomalies, vectors are 850-hPa winds (max vector ~5 m/s). Forecast days are 20 Jan (0 day), 25 Jan, 30 Jan, 4 Feb, and 9 Feb, 2006. Images courtesy of BMRC Climate Forecasting Group.

The left panel shows the current OLR (shading) and 850 hPa wind (arrows) anomalies associated with the MJO, as determined by regression between these parameters and RMM1 and RMM2 indices. The top row is for the current analysis (2 days old, from 20 Jan 2006). The second row of panels is the 5-day forecast of these fields, followed by the 10-, 15- and 20-day forecasts. The right column is the same set of forecasts, but with the current low frequency (>120 days) anomalies superimposed.

These MJO regressions maintain convection over the north Australian region only up to about 30 January. As the (RMM1, RMM2) vector rotates on the phase diagram into phase 6, a convectively suppressed region with low-level easterly anomalies should move into the Darwin region and suppress the monsoon. The suppression would last unto near the end of the experiment (mid February).

This is a projection based on lag-regression, and so has skill only at the level of such procedures. However, given the current large magnitude of the (RMM1, RMM2) vector (see Fig. 6 from 21 Jan 2006 report), it would be prudent to carry out as many research missions as possible in the coming few days to a week.

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