

Verification for Recent Japan Meteorological Agency (JMA) Model Predictions

The seasonal (3-month) mean predictions by the JMA's ensemble prediction system are verified for the following two seasons: (1) spring 2005, March to May average prediction from the initials at 13th February 2005 and (2) summer 2005, June to August average prediction from the initials at 15th May 2005.

The verifications presented here are made by comparing the predictions with the observations based on the diagnosis using GANAL (NPD/JMA) and OLR (NCEP) as the substitute of precipitation data.

For the spring 2005, above normal precipitation over the tropical western Pacific is indicated from negative OLR anomalies. Those were predicted as the response to warmer SST anomalies around the equatorial dateline. The SST anomalies are maintained through the winter. From East Asia, the Pacific to the Atlantic, anticyclonic anomalies in the subtropics and cyclonic anomalies over the extratropics are analyzed in the 200 hPa stream-functions. Those were also predicted well except for their small structures. Over the regions of northerly wind anomalies such as East Asia and the eastern North America, observed lower temperature anomalies were predicted to some extent.

For the summer 2005, although dry anomalies were predicted over South China Sea and the maritime continents, observed OLR indicates that real precipitation over the western Pacific is above normal. Positive precipitation anomalies were predicted well in the northern tropical Atlantic. Asian summer monsoon was not totally predicted (clear in the 200 hPa circulation) maybe due to the poor prediction for the western Pacific precipitation. Anticyclonic anomalies in South Asia and East Asia were partly captured though. Low anomalies over the western North America, Siberia and the central Asia can be found in the prediction. Warm anomalies were predicted over Japan and Korea regions as observed.

In summary, the predictions were successfully made from views of tropical precipitation, extratropical circulation and temperature anomalies for the spring. The Asian summer monsoon anomalies were not predicted well including the upper-level circulation and associated precipitation anomalies.