

Name: Augustin Vintzileos Augustin Vintzileos
Augustin.Vintzileos@noaa.gov
UMD/ESSIC
1028 S Walter Reed Dr. #707
Arrington, VA, 22204
Country: United States
Title: Challenges in forecasting the MJO
Additional authors: Jon Gottschalck
Additional Affiliations:
Abstract:

The Madden-Julian Oscillation is among the most important sources of predictability at subseasonal time scales. It modulates the statistics of tropical cyclones in the Atlantic sector during summer and mid-latitude storms hitting the west CONUS during winter. It was shown that MJO affects the reliability of weather forecast over Europe and weekly precipitation amounts in agriculturally poorly irrigated areas as in India during the Monsoon season. Therefore, socio-economic benefits resulting from successful and reliable forecasts of the MJO at an operational basis cannot be over-emphasized. However, thus far, even a theoretical explanation of the MJO was elusive due to the lack of a comprehensive observational dataset. To resolve this lack of data an international observational campaign was recently funded and executed. The United States component in this effort was DYNAMO. DYNAMO was a successful campaign as it observed a plurality of MJO events. During the campaign NOAA/CPC and the University of Maryland-ESSIC were funded by NOAA/CPO to provide operational monitoring and forecast support.

In this paper we present a synthesis of experience gained from hindcasting / forecasting the MJO and results from the DYNAMO period in an effort to delineate some of the remaining questions. We address issues regarding (a) atmospheric physics and initialization, (b) oceanic physics and initialization and (c) the importance of air-sea interactions. We finally explore possibilities for the development of an operational multi-model subseasonal forecasting system.
End