

Quasi-operational MJO forecasts created using operational medium-range ensemble forecasts

Tetsuo Nakazawa^{1,2*} and Mio Mstaueda^{2,3}, Hirokazu Endo²

1: World Meteorological Organization, Geneva, Switzerland

2: Meteorological Research Institute, Japan

3: University of Oxford, UK

The Madden-Julian oscillation (MJO) is the dominant mode of intraseasonal variability in the tropics. Accurate simulations of the MJO are important for studies of weather and climate in the tropics and extratropics. We introduce a quasi-operational website of medium-range MJO forecasts, which are available at http://tparc.mri-jma.go.jp/TIGGE/tigge_MJO.html. The MJO forecasts in the website are based on operational medium-range ensemble forecasts from numerical weather centres: BOM, CMA, CMC, CPTEC, ECMWF, JMA, KMA, NCEP, and UKMO. The ensemble forecast data are extracted from the TIGGE portal, as part of the THORPEX research programme. We also assess the forecast performance of operational medium-range ensemble forecasts, regarding the MJO for the period from 2008 to 2010. The results indicate that ECMWF and UKMO generally yield the best performances in predicting the MJO; however, they do not always show similar skills. ECMWF performs well in simulating the maintenance and onset of the MJO in phases 1-4, whereas UKMO and NCEP perform well in simulating the maintenance and onset of the MJO in phases 5-8. Thus, the best-performing numerical weather prediction (NWP) centre varies with the phase of the MJO. With advance knowledge of the forecast characteristics of each NWP centre, we can ensure more reliable forecasts of the MJO in operational uses, based on the MJO phase. This represents an advantage of the multi-centre grand ensemble approach.