



Emergence of Apparent Group Velocity in MJO Filtered OLR Anomalies

Paul Roundy

UNIVERSITY AT ALBANY, Atmospheric and Environmental Sciences, United States (proundy@albany.edu)

Data filtered in the wavenumber frequency domain to extract signals proximate to the spectral peak of the Madden Julian oscillation (MJO), including eastward-moving features only, suggest that the signal exhibits a westward group velocity. This presentation will demonstrate that this result can emerge from filtering noise that is red in wavenumber and in frequency. If the apparent group velocity were real, we might expect that it would appear systematically in data filtered to include both eastward and westward propagation in the intraseasonal frequency range. Results presented demonstrate that no apparent dominance of eastward or westward movement of clusters of MJO convective anomalies is present in data so filtered, suggesting no clear evidence of a real eastward group velocity in the MJO. Results also suggest that eastward or westward movement of clusters of MJO events is modulated by the background seasonal to interannual state as partially determined by the evolution of the El Niño/Southern Oscillation and the Indian Ocean dipole. When warm water moves eastward or westward, clusters of MJO convective events and the circulation signals forced thereby tend to migrate eastward or westward as well. Results are consistent with a non dispersive signal modulated by background conditions. I may also discuss how our interpretation of the power spectrum of outgoing longwave radiation anomalies in the tropics has misled us to believe that the MJO and convectively coupled Kelvin waves are statistically distinct phenomena.