



Impact of the MJO on the Boreal Winter Extratropical Circulation

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This talk will focus on the potential for intraseasonal prediction of the polar vortex and the North Atlantic Oscillation from the Madden-Julian Oscillation. Phase 7 of the Madden-Julian Oscillation leads to a trough in the Northwest Pacific sea level pressure pattern, and subsequently to enhanced tropospheric wavenumber 1 wave driving of the vortex. This enhanced planetary wave flux can then force a weakened stratospheric vortex. Phase 3 has largely opposite opposite impacts. These effects are present in both reanalysis data and a comprehensive atmospheric general circulation model. The anomalies propagate down to the surface, such that the surface Arctic Oscillation is significantly modified 50 days after certain MJO phases. Such a 50 day timescale for the potential for more accurate intraseasonal forecasts is longer than has been previously acknowledged.

Garfinkel, C. I., J. J. Benedict, and E. D. Maloney (2014), Impact of the MJO on the Boreal Winter Extratropical Circulation **, *Geophys. Res. Lett.*, 41, 6055-6062, doi:10.1002/2014GL061094.

Garfinkel C. I., S. B. Feldstein, D. W. Waugh, C. Yoo, S. Lee (2012), Observed Connection between Stratospheric Sudden Warmings and the Madden-Julian Oscillation**, *GRL*, 39, <http://dx.doi.org/10.1029/2012GL053144>.