

**SESSION: (C3) Time scale interaction (includes teleconnections)**

**(C3-06)**

**The role of tropical-extratropical interactions on the optimal growth of Madden-Julian Oscillation events**

Henderson, Stephanie (1), Vimont, Dan (2)

Center for Climatic Research, University of Wisconsin-Madison (1,2)

The influence of tropical-extratropical interactions on the Madden-Julian Oscillation (MJO) is investigated using linear inverse modeling (LIM). Extratropical circulation and tropical heating optimal initial conditions for MJO events are identified for all MJO phases. The extratropical initial condition for some MJO phases includes a dipole circulation anomaly over the Atlantic basin, as well as circulation anomalies near the Pacific subtropical jet likely associated with previous MJO phases. The impact of tropical-extratropical interactions on MJO growth is examined using a LIM that removes these interactions. Results suggest that removing the influence of the extratropical circulation reduces the amplitude of MJO heating and decreases MJO variance.