

# CGD SEMINAR



**DATE:** Tuesday, 14 November 2017

**TIME:** 11 a.m.

**LOCATION:** NCAR, 1850 Table Mesa Drive  
Mesa Lab, Main Seminar Room

**TITLE:** The Importance of Sub-seasonal  
Tropical Variability in CESM

**SPEAKER:** Rich Neale, NCAR

## ABSTRACT:

Intra-seasonal atmospheric tropical variability (ISV) is arguably the poorest understood and observed part of the time-space spectrum. The initiation, maintenance and decay of convectively coupled organized wave activity, that underpins this variability, remain poorly understood and as a consequence poorly modeled in GCMs. The recent state of the art is an overall underestimate of ISV, with a particular deficit in space-time regions specific to the Madden Julian Oscillation (MJO). This has proven to be a persistent scientific irritation, inconvenience and disappointment. Since the MJO is associated with the spawning of tropical cyclones, suppression of the diurnal cycle of precipitation, and triggering/amplifying of El Ninos through westerly wind bursts, the inherent 20-100-day time period of a mature event could provide significant extensions to current predictability time horizons.

We assess the skill of CESM in simulating intra-seasonal modes of variability, including the MJO, emphasizing three ongoing aspects thought to control ISV in models: physical parameterizations, resolution and the underlying basic state climate. Furthermore, a hierarchy of models (coupled, AMIP, hindcast, and maybe aqua-planets) are employed to investigate whether the control provided by these aspects are independent of model configuration. Let's just say they aren't, and recent CESM versions using CAM6 show a particularly curious sensitivity to model configuration.

**Live webcast:** <http://www.fin.ucar.edu/it/mms/ml-live.htm>

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