MJO/Convective Transitions Breakout

Chuck Long, Chidong Zhang, Steve Krueger
Welcome

• Two sessions:
  – 1:30-3:30
  – 3:45-5:30

• Overview:
  – 11 presentations
  – Discussion:
    • Directions
    • Possible focused topics
    • Modeling MJO case studies
Session 1

1) Modulation of Tropical Tropopause Layer Characteristics by the Madden-Julian Oscillation during the DYNAMO/AMIE Field Campaigns
   - Erin Dagg, Thomas Birner, Richard Johnson

2) Cloud-Resolving Simulations of the DYNAMO Northern Sounding Array
   - Matthew A. Janiga and Chidong Zhang

3) Characteristics of mesoscale convective systems during DYNAMO
   - Angela K. Rowe and Robert A. Houze

4) The Hydrometeor Structure of Mesoscale Convective Systems during the Active Stage of the MJO
   - Hannah Barnes, Bob Houze
Session 1

5) S-Polka observations and high-res simulations of S2D during AMIE/DYNAMO
   – Zhe Feng and Samson Hagos

6) Relating Radar-Based and Large-Scale Views of Convection and Humidity to the Large-Scale Environment during AMIE/DYNAMO
   – Scott W. Powell and Robert A. Houze

7) Convective Characteristics of the Madden-Julian Oscillation over the Central Indian Ocean Observed by Shipborne Radar during DYNAMO
   – Weixin Xu and Steven A. Rutledge
Session 2

8) Cloud-resolution model simulations for DYNAMO: Sensitivity tests of large-scale forcing
   – Xiaowen Li and Wei-Kuo Tao

9) Tracking propagation of the Madden-Julian Oscillation with MPAS
   – Pilon Romain, Chidong Zhang, William Skamarock, Mitchell Moncrieff, Jimy Dudhia

10) Detrained moisture from ITCZ facilitate transition of shallow-to-deep convection in MJO
    – Samson Hagos, Zhe Feng, Kiranmayi Landu, Charles Long, Chidong Zhang

11) Cloud regime transition along GPCI line in CAM5 with a higher-order turbulence closure
    – Anning Cheng
Discussion

• Question from Tony and Matt: Is "MJO" too broad an umbrella to operate under in the context of ASR?
  – As Tony writes: ASR wants improved parameterizations for models. But one does not parameterize the MJO, one parameterizes the processes that are responsible for its existence.

• Is MJO a good forum for open discussion of the many aspects it encompasses?
Possible topics:

1. The transition from shallow to deep convection - or more properly, given the Brian Mapes stretched building block paradigm, the slow transition from more frequent shallow convection to more frequent congestus and then deep convection.

2. The transition from isolated congestus and deep convective cells to more organized convection.

3. The roles of entrainment and cold pools in (1) and (2).

4. The effect of (2) on convective momentum transport.

5. The cloud-radiative heating profile interactions that might serve as the energy source for the MJO and arise from (2).

6. More general shallow-to-deep convection issues?

7. Planning collaborative modeling MJO case studies that utilize the data collected during the recent AMIE/DYNAMO field campaigns.

8. Others?
Year of Maritime Continent

• International campaign to study Maritime Continent
• Target 2017
• Propose “AMIE-Manus 2”
  – Have radars working to:
    • Characterize the cloud populations associated with MJO phase
    • Produce a 6-month model forcing data set

• AMF Deployment in Maritime Continent
  • Pameungpeuk (7.64S, 107.69E)
  • Pontianak (0.00S, 109.37E)