

Dynamics of the MJO (DYNAMO)

United States Participation in CINDY2011

(Cooperative Indian Ocean Experiment on Intraseasonal Variability in the Year 2011)

Background:

Spring 2008:

Kunio Yoneyama and Masaki Katsumata contacted Chidong Zhang about CINDY2011 and invited the participation from the US;

Summer 2008:

- A white paper on the US participation in CINDY2011 was written (Fairall, Johnson, McPhaden, Zhang);

- The idea of CINDY2011 and its US participation were endorsed by the US CLIVAR MJO Working Group;

- A presentation on the US participation in CINDY2011 was made to the US CLIVAR Summit (Waliser);

Spring 2009:

- The US CLIVAR Process Studies and Model Improvement (PSMI) panel endorsed the US participation in CINDY2011;

- The US participation in CINDY2011 was named as DYNAMO (McPhaden);

- The DOE/ARM Manus MJO experiment (AMIE) was postponed from 2010 to 2011 to coordinate with DYNAMO/CINDY2011 (Long);

- ONR announced a DRI focusing on coupled air-wave-sea processes involved in the onset of convection and eastward propagation of the active phase of the MJO;

- Program managers of NOAA, NSF, DOE, ONR, NASA were informed of the on-going and planned DYNAMO activities;

- R/V Ron Brown ship time was requested for DYNAMO (Fairall);

- DYNAMO workshop

Workshop Objective: Plan for actions to move DYNAMO forward – *need a science and implementation plan*

Scientifically:

1. Define the rationale and objectives of DYNAMO from viewpoints of understanding, simulating, and predicting the MJO, and their societal benefits
 - *What are the gaps in our knowledge of MJO that must be filled with new observations from DYNAMO/CINDY2011?*
 - *What can DYNAMO/CINDY2011 do beyond what TOGA COARE, JASMINE, INDOEX and MISMO have done?*
2. Integrate observational, modeling, and forecast activities of DYNAMO
 - *How should numerical models be used to help planning and executing the field campaign, interpreting field observations, and testing hypotheses?*
 - *How should the field campaign be designed to maximize the value of its data to model validation and improvement?*
3. Optimize observational products from the field campaign
 - *What should be the core MJO observations vs. auxiliary observations that can maximize the overall value of the field campaign?*
 - *How should the atmosphere and ocean observing networks be optimally designed to meet the scientific objectives of DYNAMO?*

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Programmatically:

1. Facilities

- *Ron Brown vs. UNOLS (mobile Doppler radar)*
- *Ship-borne instrument complement and redundancy*
- *land component (radar at Maldives, soundings at Diego Garcia?)*
- *Other facilities?*

2. Coordination with partner programs

- *Other CINDY2011 components*
- *AMIE*
- *ONR air-sea interaction*

3. Program organization

- *Scientific Steering Committee*
- *Working Groups?*
- *Field support*

4. Funding strategy and timeline

Action Items after the workshop