

# YOTC MJO Task Force – 5th Telecon

**Meeting time:** 21:00 GMT, 17<sup>th</sup> November 2010.

## **Participants**

10 members of the Task Force  
(No Duane, Ken, Frederic, Chidong, and Masaki?)

Prince Xavier from the Hadley Centre (UK Met Office)  
June-Yi Lee from University of Hawaii

## **Proposed Agenda**

- 1) Discuss opportunity for GEWEX GCSS collaboration - subproject on MJO
- 2) Next TF meeting in conjunction with WCRP OSC (24-28 October 2011)
- 3) Synthesis paper(s) for CMIP5
- 4) Diabatic heating profiles model intercomparison project (see Nov 15 e-mail from Duane)
- 5) DYNAMO/CINDY2011 support issues?
- 6) Prince Xavier presentation of his recent work on intraseasonal convective moistening in the AR4 models.
- 7) The latest from June-Yi Lee on the northern summer ISO index.
- 8) Revisiting our high-priority near-term foci. Is having 3 foci too many?

## **Documents sent**

1. Prince Xavier's powerpoint
2. June-Yi Lee's powerpoint
3. Duane's e-mail of Nov 15<sup>th</sup> about the proposed "diabatic heating profiles MIP"

## **Meeting Minutes** (by Matt)

### **1. GEWEX GCSS collaboration**

This item was skipped. See e-mail from Duane from 27<sup>th</sup> August. Title of message was "Collaboration with GEWEX/GCSS". Recent e-mail from Jon Petch shows that GCSS are very keen.

### **2. Next TF meeting in conjunction with WCRP OSC**

As previously discussed, we aim to have our next face-to-face meeting at the WCRP Open Science Conference in Denver during October 24-28th 2011 (<http://www.wcrp-climate.org/conference2011/>). Matt summarized the e-mail communication between Duane and Jim Hurrell on the proposed program for this conference. Currently there are only a limited number of invited talks based around various science themes, and none of these themes exactly aligns with the MJO TF (or with YOTC), which Jim was resisting to change. However, Duane has been given a poster session to organise, which could probably fit whatever science we want to individually present. Harry is

also involved in organising a monsoon poster session. We should then plan a more informal meeting of the TF on the side.

Eric raised the issue that October 2010 clashes with DYNAMO/CINDY. This will probably affect Chidong, but perhaps also Eric and Daehyun (depending on the outcome of their proposals). However, even if funded, Eric is hopeful that he could still attend the WCRP conference. No one else thought that the clash with DYNAMO/CINDY would affect them.

### **3. Synthesis papers for CMIP 5**

This item was skipped, but please see the e-mail from Duane from early November (title of message was “CMIP5 and MJO TF involvement”).

### **4. Diabatic heating profiles MIP**

Duane has initiated this MJO TF subproject with an e-mail to the modelling community on Nov 15<sup>th</sup>. In that e-mail, Duane and Chidong, along with Jian Ling, Rajib Chattopadhyay at Miami and Dr. Xianan Jiang at UCLA/JPL, volunteered to scope out and hopefully be in a position to lead this intercomparison project regarding diabatic heating profiles and the MJO. Many modelling groups have already responded positively.

Eric mentioned that he did not get the Nov 15<sup>th</sup> e-mail from Duane, which was an oversight, so Matt forwarded it to everyone in the TF.

### **5. DYNAMO/CINDY2011 support issues**

This item was skipped, but see e-mail from Chidong on 17<sup>th</sup> Nov.

### **6. Prince Xavier presentation**

Prince is at the Hadley Centre and is now the coordinator of an MJO working group across the Met Office and the University of Reading. His presentation to the telecom was of some work-in-progress in which he is examining the “intraseasonal convective moistening in IPCC AR4 models”. The idea is that the RH-precip relationship defines the character of model’s convection scheme and thus the model’s ability at simulating a physically consistent MJO. A wide range of model behaviours was shown. In general, models have too much background light rain. Lag composites show that the models also tend not to simulate the moisture pre-conditioning that occurs before an intraseasonal rainfall event. Lag composites of temperature were also shown. Work is planned to use these types of diagnostics to understand the impact of changes to the convection scheme, such as of changes to the detrainment rate.

Dave noted that the temperature lag-composites also showed large problems in some models. In particular, many of the models show a deep positive temp anomaly through the depth of the troposphere at day 0 (i.e. at the peak of the intraseasonal rainfall event). These are likely models that have a quasi-equilibrium based convection scheme.

Harry commented that using diagnostics such as these is very useful for an increased understanding of the impact of a change to a model's convection scheme. However, Dave recommended that such changes should take a systematic approach. For example, by calibrating the convection scheme against a cloud resolving model (e.g. Raymond, QJRMS, 2007).

More discussion and comments occurred.

## **7. June-Yi Lee presentation**

June-Yi covered 2 items: (a) Current status of ISV Hindcast Experiment (ISVHE); and (b) Development of Monsoon ISO index.

The status of the ISVHE is best described in her powerpoint slides. June-Yi asked Harry about the POAMA 2 contribution. It is ready, but the ensemble strategy, which only had perturbations to the ocean IC, is not good for this application.

June-Yi spent more time discussing the MISO index that they have developed. Their paper describing this index is "near ready". It looks like it will be very suitable for applying to the output of the operational NWP models, in the same fashion as currently done for the eastward MJO with the RMM index. There were numerous questions and comments. For example, Hai asked why the 200mb winds were not used as part of the index. June-Yi said that the u200 did not help much to discriminate to the intraseasonal scale, so they left it out for simplicity. Matt suggested using cross-spectra between the four PCs to examine the relationships between them.

ACTION: Matt to supply code to June-Yi for cross-spectra – DONE.

## **8. Revisiting our high-priority near-term foci**

Dave, Eric, and Adam Sobel have been examining gross moist stability in models.

Daehyun has been comparing different reanalysis products using the recommended US-CLIVAR MJO diagnostics. He is also looking at composite vertical profiles of RH as a function of precipitation rate.

Daehyun has a draft paper to send on the systematic relationship between ISV and mean state bias in AGCMs. The paper illustrates some of the process-oriented diagnostics discussed by the MJO-TF. ACTION: Send paper – DONE.