

Minutes for telecon of the MJO-TF on 28 March 2013, 20 GMT.

TF members on phone: Eric Maloney, Matthew Wheeler, Daehyun Kim, CharlotteDemott, KenSperber, Jon Gottschalk, Rich Neale, June-Yi Lee, JeromeVialard, TomokiMiyakawa

Others: Min-SeopAhn

Thanks to those who were able to make this time. We will endeavour to make the telecon time more convenient for those in the Eastern Hemisphere next time.

1. Our new WMO status under WGNE

Eric provided a short history of the MJO-TF, noting that we have recently been renewed for another 3 years, and have 4 new members. This history extends back to 2006 when the U.S. CLIVAR MJO Working Group was formed, which later was renewed as the WCRP WWRP THORPEX YOTC MJO Task Force. This introduction was very beneficial for the new members on the phone. Eric stressed that with our new WMO status under WGNE, we should expect that our interactions with other groups to remain much the same.

Eric also mentioned the new TORs, which have been sent to the MJO-TF.

Ken later asked what this means for the MJO Task Force web page at the YOTC site. Matt replied that WMO have offered to provide support for a web page on the WGNE site, and the old YOTC pages will be kept for their history, with links to the new WGNE page. Matt will work on this in late April.

2. Welcome to new members

Eric welcomed the 4 new members and provided a summary of what they bring to the TF:

Charlotte DeMott of Colorado State University, Tomoki Miyakawa of University of Tokyo, Jerome Vialard of IRD in Paris, and SuryachandraRao of IITM in Pune.

3. Upcoming meetings

Eric reminded everyone that Prince has organised a meeting to discuss the joint MJO -TF/GASS Project on the vertical structure and diabatic heating of the MJO to be held in Singapore in June. TF members who have so far committed to going are Prince, Eric, Steve, Duane, Daehyun, and Charlotte. Matt added that Hongyan Zhu from Australia will be going.

The other meeting for which we hope to have strong TF participation is the IWM-V for 28 October to 1st November in Macao. The first day of this workshop will be

focused on the MJO, with invited talks from many of the MJO-TF members. In addition, we will have a business meeting of the MJO-TF on Sunday 27th October, the morning of which will be joint with the AAMP. This will be our only face-to-face meeting for 2013, and some travel support is available from WMO. It was noted that even though most of the oral presentations are invited, there is still some room for contributed oral presentations. The rest of the contributed papers will be posters.

ACTION: Matt sent the IWM-V call for papers to everyone. Abstracts due on 15th June.

ACTION: When Matt returns from vacation in mid April he will send an e-mail asking who needs travel funding.

4. Proposed interaction of MJO-TF with S2S

Duane was not present to discuss this, but June-Yi, who is also a member of the S2S group, was able to fill us in on what was discussed at a recent S2S meeting.

Due to the significant potential for contributions by the MJO TF to the S2S effort, a recommendation was made to consider the MJO TF as a valuable research arm for S2S, including further development of simulation and forecast diagnostics/metrics, multi-model evaluation and process modelling studies, provide guidance on forecast products, identifying high priority research topics relevant to MJO and S2S and facilitating community interactions relevant to S2S.

In particular, four synergistic activities were mentioned, which June-Yi provided in a summary e-mail.

Eric noted the similarity of many of the suggested synergistic activities with the new MJO-TF, which will make the interaction straightforward.

5. An update from Daehyun on his RCP diagnostics paper

Daehyun explained the philosophy of the process-oriented diagnostics for the new members. Eric added that this is a philosophy that we want to extend to other aspects of the MJOs dynamics, in particular to air-sea interaction.

Daehyun provided a set of slides to discuss. Many of the plots are figures from his paper, which he has revised since first sending to the co-authors a few weeks ago.

Slide 1 showed the RCP diagnostic from several different observational data sets. ERA Interim reanalysis was used for the RH in all the plots, but 3 different precip data sets were used: GPCP, TRMM, and ERA-Interim. It was noted that a stronger variation in RH is seen in the plot using ERA-Interim precip because these fields are better correlated. The plot with TRMM was more like the plot with ERA precip than GPCP, suggesting that GPCP is the odd one out. Tomoki wondered whether this may

be because TRMM is assimilated into ERA, but later investigation by Daehyun shows that it is not.

Daehyun went on to describe the 3 different metrics that he has tested. He also described the 3 different measures of MJO simulation fidelity. The aim is to see which RCP metric is best related to the MJO simulation fidelity measures in the 28 models available.

Based on the table on slide 9, the best RCP metric appears to be a mass-weighted average of the RH in the 850-500 hPa layer for the upper 5% of rain events (2nd row of table).

Finally, Daehyun showed plots relating the RCP metric to biases in the mean state. The models with the high values of the RCP metric (and hence stronger MJO) have a worse mean state in terms of the Double ITCZ problem. Daehyun is unsure whether to tackle this in the same paper.

6. Update from Eric on the MSE budget process-oriented diagnostics paper

Eric provided a brief summary of the status of the second process-oriented diagnostics paper led by Jim Benedict. The paper is in its second iteration, and about to be resubmitted for comment to the co-authors. Although the results appear to be interesting and physically meaningful, Eric noted that a sticking point in the paper is that the moist static energy diagnostics of the models with poor MJOs look more like those from ERA-I than the models with good MJOs. This conundrum is still being worked out. The possibilities exist that: 1) some models are getting a good MJO for the wrong reasons, 2) ERA-I is wrong, as key aspects of the MSE budget would be expected to be heavily influenced by parameterization assumptions of the reanalysis model, or 3) the gross moist stability MSE diagnostic may need refinement.

7. Update on the BSISO activity and its implementation at APCC by Matt

Hae-Jeong Kim at APCC has been working hard at getting the real time forecasts of the BSISO indices implemented at APCC. Thanks also to help from June-Yi and Jon for supplying code and procedures. It has taken time to set up the FTP transfer and specify the exact data format, but good progress is being made. Hae-Jeong has also produced a web page layout. Hopefully by this coming boreal summer there will be some BSISO forecasts to show.

8. Air-sea interaction review ideas from Jerome

Jerome suggests that we should start our work on this topic by first providing a comprehensive literature review of the role of air-sea interaction for the MJO. Later this may be extended by proposing and carrying out some carefully thought out modelling experiments. Such a review should extend those by Harry Hendon and Jean-Phillipe Duvel which were published in the Lau and Waliser book.

Jerome feels that there has been some recent advancements in observations that potentially allow for a greater role of the ocean than previously thought. In particular, there are now much better satellite estimates of SSTs that allow for a more accurate determination of the SST under thick clouds. Further, much of the previous work on this topic (mostly as a result of TOGA COARE), has focused on the western Pacific, yet it appears that the SST signal of the MJO is in fact much greater in parts of the Indian Ocean. This points to the need for a new consensus review on this topic.

Eric pointed out that at the recent DYNAMO meeting it was shown that the coupled forecast models performed much better for predicting the RMM index during DYNAMO than the uncoupled ones

Some discussion was also made on what the CMIP5 model database could tell us about coupled versus uncoupled models. Rich pointed out that the AMIP style runs use daily SSTs that are interpolated from monthly, so they do not have the full intraseasonal variation.

Charlotte discussed the work she has been doing with the SPCAM model in coupled and uncoupled configurations, including uncoupled simulations run with high resolution daily SSTs and monthly interpolated. Ken asked whether the coupled runs were with a slab ocean or dynamical ocean. Charlotte answered that it is dynamical, but very coarse resolution.

ACTION: Continue this discussion on e-mail. In particular, share with the group any recent papers that may shed new light on the coupled versus uncoupled question.