

Minutes for telecon of the MJO-TF on 17 December 2013, 14 GMT.

TF members on phone: Ken Sperber, Matt Wheeler, Eric Maloney, Duane Waliser, Rich Neale, Charlotte DeMott, Steve Woolnough, Tomoki Miyakawa, Daehyun Kim

Others: Michel Rixen, Tetsuo Nakazawa, Teresa Alcober

1) Discussion of Past Action Items (Eric Maloney)

Eric reviewed progress on action items resulting from the Macau meeting. The action items are listed here sequentially, with their status.

A1) Request for more 6-hourly data in the S2S database, esp. precipitation.

Eric talked with Frederic about this request at the October S2S workshop in Jeju, Korea. Frederic was receptive to this idea, and it will appear as a discussion item on an upcoming January S2S telecom. Tetsuo said that it good to get at least 3 hourly data to resolve the diurnal cycle, and the task force agreed, although we are not sure how much flexibility is possible. Duane said that good that we at least got Frederic to consider 6 hourly data, since the plan seems a bit inflexible.

A2) Drafting of S2S plan for Maritime Continent Subproject.

This is progressing nicely, and a draft was generated by Steve and Duane. This is a topic of discussion later on the current MJOTF call (below).

A3) Contact WGNE to request more modelling center participation in boreal summer forecasting activities hosted at APCC.

Matt contacted Andy Brown and a call went out by WGNE for more modelling center participation. We have not found out if any more modelling centers have contributed to the boreal summer prediction database yet. **Followup Action Item:** We should check with APCC.

A4) Finalize plans for DYNAMO hindcast case associated with GASS/MJOTF vertical structure and diabatic heating project

Nick K. has generated and circulated a draft plan for comment and additions, and this plan is being finalized and we anticipate submission to GASS within the next month.

A5) In parallel with GASS/DYNAMO DYNAMO hindcast plan development, develop plan for hindcast intercomparison with isotope-enabled models.

Camille has been providing input to the plan led by Nick, which will include instructions on an intercomparison with isotope-enabled models.

A6) Xianan will give update at future telecon on CMT in existing GASS/MJOTF simulations

Xianan, Duane, Dick Johnson, and Mitch had nice talk at AGU about CMT in models, and Xianan will likely be ready by our next telecon (late January?) to discuss some of

his new results. **Followup Action Item:** Have Xianan present on CMT at next MJOTF telecom

A7) Pursue possible air-sea interaction review to develop hypotheses on proceeding with process-oriented diagnostics or common experiments.

Charlotte took the lead on reinitiating this activity, which will include a draft plan to the task force on how to proceed with the air-sea interaction activity. Charlotte agreed to taking leadership with the idea that she would have much help. Chidong, Steve, Nick, and others on the task force will gladly help Charlotte in this endeavour.

Action Items: Charlotte will send an email to air sea interaction oriented members of the task force to organize work on the review and other activities. Charlotte will also present some research results on air-sea coupling at the next telecon.

A8) Min-Seop CMIP5 action items

Min-Seop has assessed 30-90 day variance and not just total variance in CMIP5 models, separated E/W ratios into high and low ratios rather than just good and bad models, and has recently updated key members of the task force on his progress and solicited comments. Min-Seop has received many good ideas for follow-up analysis based on this interaction.

2) S2S-MJOTF Maritime Continent subproject (Steve and Duane)

Steve initiated a discussion of the MJOTF Maritime continent subproject with S2S, thoroughly reviewing the document that Steve and Duane developed and sent to task force. Some discussion of this document ensued.

Matt asked about the spatial resolution of the S2S model database. Steve said it might be at the actual model resolution, although was not entirely sure. Duane said it might actually be regridded. Matt said observed rainfall over the islands in the Maritime Continent leads the main MJO convective center, and so it would be nice to have access to as high of resolution output as possible to distinguish the differences between land and ocean.

Duane thought it would be nice to examine in the MJOTF/GASS model database in the high resolution output to determine whether models successfully show contrast between land and ocean. Steve provided the caveat that the MJO doesn't really get across Maritime continent in those expts. Tetsuo made the comment that ECMWF will provide a special analysis similar to the YOTC period but during the upcoming polar program period. It might be possible to get ECMWF to provide higher temporal resolution output that would aid Maritime Continent investigation.

Ken asked for in clarification on the hindcasts in the S2S database regarding the required format. Steve said they were unfortunately non-standard and model dependent.

Duane thinks mining the hindcast datasets from the GASS/MJOTF YOTC events are critical because S2S database will not be ready for a while. Duane asked Matt for any updates on the possible MC field program. Matt indicated that there was a 2-day Australian workshop on the Maritime continent in general, and said there is some momentum behind a MC program. Field program discussions still in infancy, tentative timeline slated for 2017-18.

Matt asked what happens after we produce this S2S-MJOTF subproject document, and it is presented into S2S. Steve said it will be implemented into S2S implementation plan. There is a January 9 S2S telecon at which this document will likely be discussed. **ACTION ITEM:** Duane said it is imperative for the MJOTF to provide comments on the MC plan now in advance of the telecon. Once formally in the S2S plan, this document could charge countries like Australia to go off and provide resources for the work.

Duane asked Michel and Tetsuo about resources, and thought it would be good to somehow highlight key areas of interest to the task force that (already funded) graduate students and postdocs might pursue in their research. Might be a good way to entrain people into task force efforts. Michel thought a WCRP mailing list could be a possibility, especially if we put together a page or two describing task force efforts. Matt said challenge is to get university professors to have their spare students work on these projects. Michel thought open science conference could be another way to advertise our opportunities. Seems like YOTC, GEWEX, email lists etc are a good venue for advertising about task force work.

3) Recent WGNE telecon and Upcoming Meetings

Matt presented a summary of MJOTF activities at the recent WGNE telecon. WGNE generally thought the task force is making excellent progress. WGNE is talking to Frederic on S2S efforts regarding tropical/extratropical interaction.

Regarding future meetings, the task force intends participation in the August 2014 WWRP Open Science meeting. A one-day task force business meeting is proposed for Saturday 16th of August. Most of the task force plans to attend, although Steve might not be able to make entire conference, and Duane might not be able to attend the one-day business meeting. Michel talked about the MJOTF's request for travel and logistical support for the workshop. He is discussing request for support with Tetsuo and others. **ACTION ITEM:** The MJOTF should create an itemized list with prioritized requests, including names of those seeking support and what type. Ken asked what the deadline for submission was for the general conference. 24th February is the abstract submission deadline.

Another future meeting of relevance is the S2S meeting in Washington DC in Feb 2014. Eric is attending this.

4) Process-oriented diagnostics on Radiative Feedbacks

Daehyun provided a discussion of process-oriented diagnostics based on CMIP5 model strength in simulating radiative feedbacks, which show a strong relationship with success at producing an MJO. Many models underestimate the strength of the radiative feedback. Duane asked whether models underestimate LW feedback because of precipitating or non-precipitating clouds? Daehyun speculated that they neglect role of wind on cloud fraction. With wind, cloud condensate spreads more. Duane thought that effect of falling snow or rain on LW is also neglected. Eric said that Xianan is analysing GMS in the 20 year simulation database for the YOTC case. Eric broached the idea that mean state biases in many models may be because GMS is lowered too much to compensate for too weak a radiative feedback. Discussions among Steve, Eric, Daehyun, and others concluded that it would be good to look at radiative feedbacks and other terms of the MSE budget in a more unified framework, possibly in terms of effective GMS that includes both GMS and radiative feedbacks. **ACTION ITEM:** Daehyun and Eric will work with Xianan to assess radiative feedbacks and other terms of the MSE budget in a unified framework in the long 20-year simulations of GASS/MJOTF model database.

Rich noted in Steve Klein's model investigations that convective parameters produced the strongest impact on MJO forecast skill. However, the greatest entrainment produce poor basic states. It would be interesting to examine whether CMIP models produce similar behaviour. Daehyun noted that the CMIP5 models are a somewhat different framework than perturbation experiments since CMIP5 models are tuned to produce realistic basic states. Eric asked whether any of the perturbed parameters directly affected radiation. Rich did not know specifically.

5) Other Items

Michel noted an upcoming WCRP grand challenge workshop on clouds, circulation, and climate sensitivity in Germany March 24-28, 2014 that is relevant to our task force. He will send an email about the workshop, since work like Daehyun's is very strongly relevant to this workshop. He is not sure if this is by invitation only, or more open. Michel sent this link: <http://www.mpimet.mpg.de/en/science/the-atmosphere-in-the-earth-system/workshop.html>

Eric asked whether we should start writing a subproject on S2S and boreal summer? This might be a discussion topic for future telecons.

Tomoki said he had conversation at AGU that concluded it would be good to find more information on the type of CMT parameterizations in models of the MJOTF/GASS project. Duane suggested he either contact the modelling centers participating in the MJO/GASS hindcasts, or look at CMIP5 documentation for a taste of different treatments of model momentum transport.