

## ***Summary of 02 October 2007 Drought Working Group Telecon***

### ***1) Summary of multimodel ensemble work (Dennis Lettenmaier)***

Dennis described a project to force 6 different land models (at  $\frac{1}{2}$  deg) with observations (NCDC gridded data) for the period 1915–2003. The idea is to see how similar the results are in terms of drought statistics (similar to the work Randy described a few months ago), such as percentiles relative to climatology, as well as looking at specific historical droughts (Dennis has a 2005 paper on methods for characterizing droughts). The runs are on-going. He will make a presentation at this years Climate Diagnostics and Prediction Workshop, and hopefully another presentation at our next teleconference.

### ***2) Review status of model simulations and discuss strategy for data sharing and analysis of the results***

## **Groups:**

### **A. NASA/GMAO (NSIPP-1)– Siegfried Schubert/Phil Pegion**

All runs are completed except for soil moisture runs

Just as a Clarification and Review of the soil moisture experiments, there are actually two sets of runs being proposed, both involve running the AGCM with a specified climatological annual cycle of soil moisture (as described in the ppt on our website)

- a) The specified climatological annual cycle of soil moisture is obtained from long AMIP-style runs (e.g., C20C runs or perhaps shorter runs starting in about 1950). The AMIP-style run is then repeated with the specified soil moisture. Ideally one would want several ensemble members for both the original and modified AMIP runs.
- b) The specified climatological annual cycle of soil moisture is obtained from the run forced with climatological SST. Then repeat the runs forced with the idealized Pacific and Atlantic SST anomalies (annual mean EOF patterns) but this time with the specified climatological soil moisture.

## **B. Lamont (CCM3) – Richard Seager, Mingfang Ting**

All but the soil moisture experiments have been completed.

The results can be found at:

<http://kage.ideo.columbia.edu/descriptions/CLIVAR/plot.html>

## **C. NOAA/GFDL – Tom Delworth**

- all of the runs with the Pac and Atl patterns were completed
- one of the runs with the linear trend is complete
- for the tropical Pac and Atl cases the positive phases are done

## **D. NOAA/NCEP – Jae Schemm, Kingtse Mo, Arun Kumar**

35 years completed with climatological SST

Completed warm PAC/ warm Atlantic

4 runs going – positive trend, and warm Pacific and other Atlantic (looking at positive response first to see if it is worth doing negative)

## **E. NCAR (CAM3.5)– Sumant Nigam, Clara Deser, Alfredo Ruiz–Barradas and Aiguo Dai**

3.5 version not quite finalized – will wait a few weeks, have resources ready (problems tied to the soil moisture and convection schemes)

## **F. COLA/Univ Miami – Ben Kirtman**

Ben has developed an innovative technique to forced a coupled (atmosphere–ocean–land) model with the idealized SST anomalies by biasing the SST in the coupled system toward the idealized anomaly pattern. He completed 50–years with the cold Pacific pattern, and the results look promising (interesting response in the Atlantic). An experiment with the warm Pac pattern is running.

## **Sharing data**

In the short term each group will make their data available using local resources (ftp, GDS, etc.)

I will check with PCMDI about the possibility of having them serve the data – having such a central location for the data should be especially important as we begin to advertise the availability of the data to the greater user community.

## Analysis

Here are some possible projects that might be a useful way to coordinate our analysis of the results from the various models. Every group is of course free to pursue whatever they like. Let me know if you are interesting in participating in any of these efforts (and if you might be interested in leading any of them). Feel free to suggest others. The idea is to try to get some papers out in a timely fashion.

I would like to volunteer to lead the first one (overview of the project) and of course all the groups will be represented.

- 1) Overview of project and basic comparison (Schubert)  
limit to Pac and Atl cases  
Annual mean precip, tsfc, 200mb z
- 2) Comparison and Validation of dynamical mechanisms  
(perhaps limit to Pac and Atl cases)
  - a) Seasonality of response, nature of atmospheric response, variability
  - b) tropics only runs, land surface impacts, impact of global change/trend
- 3) Response to ENSO versus Low frequency patterns
- 4) Characterizing Drought  
drought index work (perhaps include a comparison with the PDSI, characterizing drought behavior, changes in the pdf of precipitation and soil moisture, off–line versus on–line C20C and fully coupled with ocean, also compare with idealized SST runs
- 5) Understanding the ocean response

e.g., response in Atlantic and resulting impact on land limitations of AMIP runs

*3) Linking our wg activities to NIDIS (Marty Hoerling – to be confirmed)*

hopefully next time (need to check on possible NIDIS meetings next fall)

*4) Discuss plans for next year's drought workshop (Dave) (together with DRICOMP)*

We are planning to have a workshop sometime in the fall of 2008.

a) Date: Sept/Oct – TBD

Possibly in conjunction with the Climate Diagnostics and Prediction Workshop that is being planned for 20–24 Oct 2008 at the National Drought Mitigation Center in Nebraska

Need to check whether there are any NIDIS workshops/meeting planned for that time frame

b) Participants

Our expanded drought working group (basically everyone on this email list), and the DRICOMP investigators. Possibly also some further international participation (GEWEX, etc) – David Legler will pursue that.

Other activities:

Possible 2008 Spring AGU special session – last week of May in Fort Lauderdale. Dave Gutzler will check on this.

Possibility of a drought session in the 2009 AMS meeting (Aiguo)