

## **AOS 575: Climatological Analysis**

### **Paper 4**

Discussion date: 4/4/2008

Choose one of the following two papers to read and analyze. Briefly (2-3 pages) summarize the major results of the paper and the methods used to obtain those results, and address the questions below.

Paper 1:

Deser, C. and M. S. Timlin, 1997: Atmosphere-Ocean Interaction on Weekly Timescales in the North Atlantic and Pacific. *J. Climate*, **10**, 393-408.

1. Explain how Tables 2 and 3 were constructed, and explain why the authors assert that the *actual* squared covariance is more appropriate for this study than the squared covariance fraction.
2. Explain why MCA performed on Z500 and SST tendency supports the interpretation of the lagged MCA results in Figure 1.
3. How do Figures 5 through 8 support the physical interpretation of the lagged MCA results?

Chiang, J. C. H. and D. J. Vimont, 2004: Analogous Pacific and Atlantic Meridional Modes of Tropical Atmosphere-Ocean Variability. *J. Climate*, **17**, 4143-4158.

1. Describe how the “left” and “right” data are prepared prior to performing MCA. How is the 10m wind field constructed?
2. How do the authors argue that the MCA analyses identify real “modes” of coupled climate variability?
3. Describe how Figures 8, 9, and 10 identify the physical relationships between mid-latitude atmospheric variability and tropical coupled interactions.