ATS/CIRA Colloquium

Mel Shapiro

Visiting CSU ATS from NCAR

The influence of low-frequency variability on the life cycles of high-impact weather during the winters of 2009-2011: simulations, predictions and observations

Hosted by Richard Johnson

Thursday, November 8, 2012

ATS room 101; Discussion will begin at 3:30pm
Refreshments will be served at 3:00pm in the weather lab

It has been widely noted that the anomalously extreme weather events of the recent winter seasons coincided with large-amplitude sub-seasonal to seasonal anomalies, particularly in the arctic modes of variability, i.e., Northern Annular Mode and North Atlantic Oscillation. We hypothesize that these low-frequency variations were sufficient to alter the breaking behavior of the extratropical storm-track synoptic eddies and their internal weather characteristics. Simmons and Hoskins (1976)were first to perform idealized numerical experiments to demonstrating that the life cycle of extratropical cyclones can be modulated by their background environment, leading to a distinction between cyclonic and anticyclonic wave breaking at the tropopause and surface cyclone structure. Subsequent studies, e.g., Shapiro and collaborators, revealed that this characterization is valid in both idealized studies, observations and numerical forecasts. The present study address the relevance of the low-frequency flow anomalies on the events of the recent winters.

Link to colloquium videos and announcement page: http://www.atmos.colostate.edu/dept/colloquia.php