Development of Conceptual Models of the Impacts of ENSO and Arctic Oscillation Interactions on Intraseasonal Temperature Extremes During the Florida Dry Season

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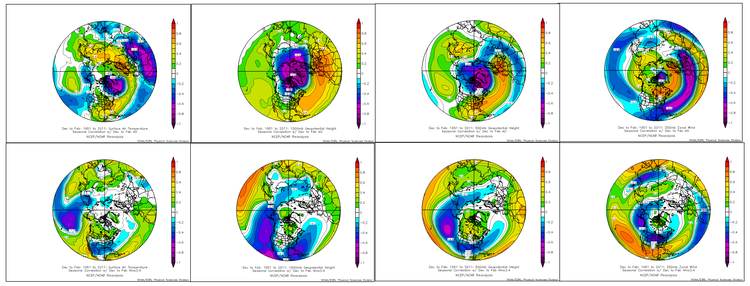
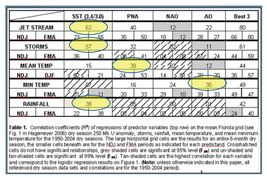
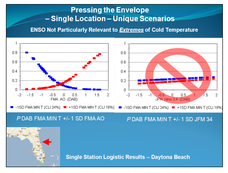


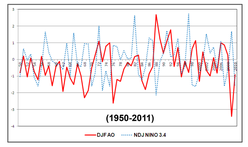
NH correlation maps of mean DJF AO and NINO 3.4 with mean air temp, 1000mb GPH, 500mb GPH, and 250mb zonal wind



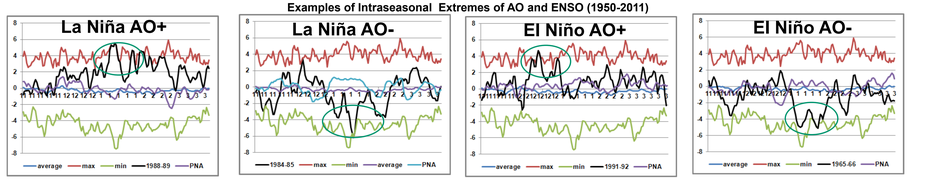
From Hagemeyer, 2007.



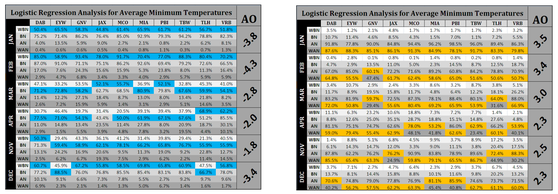
Logistic regression results for FMA mean minimum temperature for AO NINO 3.4.



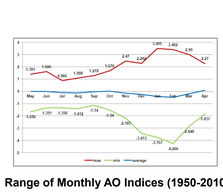
Mean DJF AO and NDJ NINO 3.4 Indices



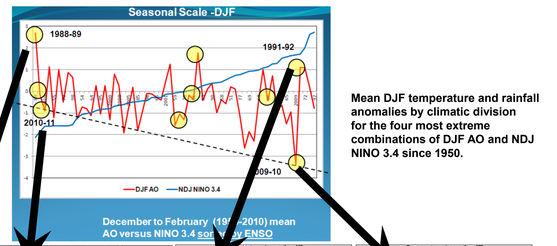
Daily AO and PNA indices for the 1988-89, 1984-85, 1991-92, and 1965-66 winter seasons representing the four extreme combinations of AO and ENSO plotted with mean daily and record high/low daily AO (1950-2011).



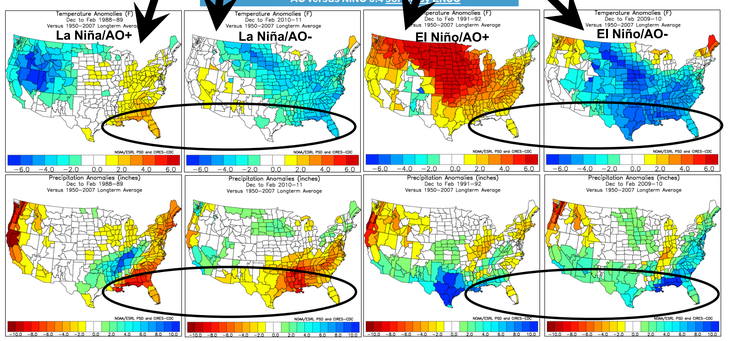
Logistic regression results for quintiles of average monthly min temps computed from extreme values of monthly AO indices.



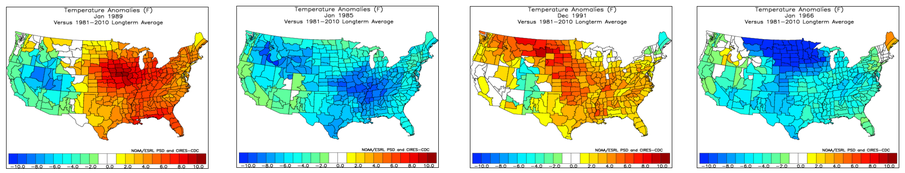
Range of Monthly AO Indices (1950-2010)



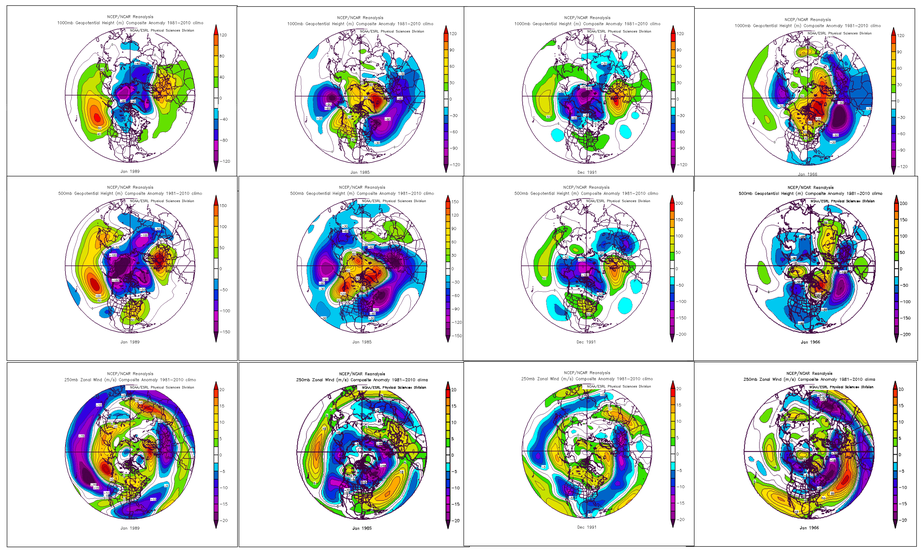
Mean DJF temperature and rainfall anomalies by climatic division for the four most extreme combinations of DJF AO and NDJ NINO 3.4 since 1950.



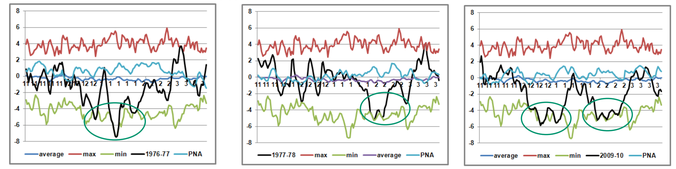
Temperature anomalies in the contours represented by the blue ovals above.

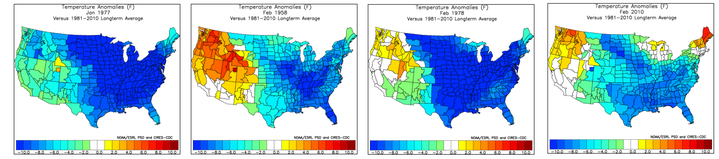


Mean monthly anomalies of NH 1000mb GPH, 500mb GPH, and 250 mb zonal wind corresponding to the periods represented by the blue ovals above.

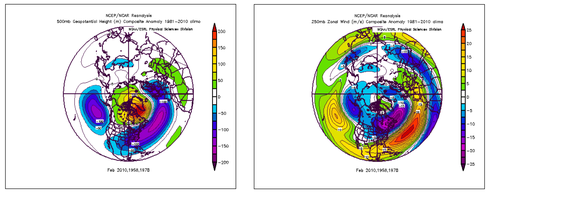


Notable El Niño AO- Cold Events

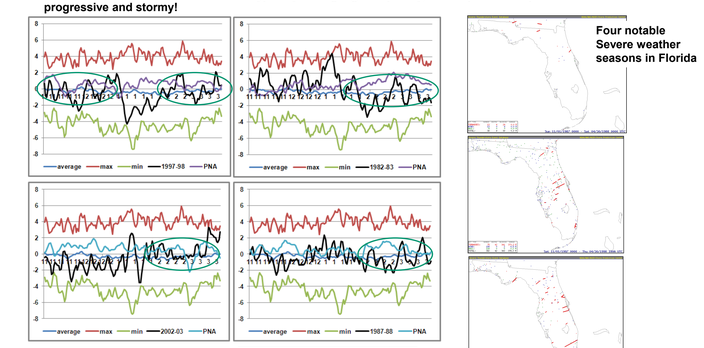




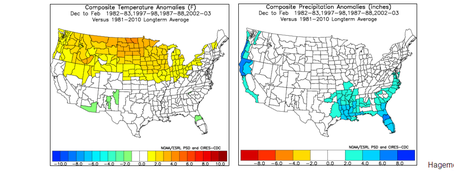
Composite 500mb GPH and 250mb zonal wind for notable February El Niño / negative AO events



<u>Caveats</u> – This study relates to <u>extreme cold weather</u> - extreme rainfall and severe weather outbreaks in Florida during El Niños occur more typically during high frequency, low amplitude AO periods – i.e progressive and stormy!



Four notable Severe weather seasons in Florida



DJF composite temperature and rainfall anomalies for the four seasons above.

Hagemeyer, B.C., 2007: **The relationship between ENSO, PNA, and AO/NAO and extreme storminess, rainfall, and temperature variability during the Florida dry season: thoughts on predictability and attribution.** Preprints, 19th Conference on Climate Variability and Change, San Antonio, TX, Amer. Meteor. Soc., Paper JP2.16.

Hagemeyer, B.C., 2008: **Attribution of extreme variability of temperature, rainfall and storminess in the Florida dry season and development of probabilistic aides for decision makers.** Climate prediction application science workshop 2008, Chapel Hill, NC (03/08).

Hagemeyer, B. C., 2011: **The 2009-10 El Niño and Florida Dry Season Tornadoes: A Reality Check for the Limits of Predictability.** Preprints, 23rd Conference on Climate Variability and Change, Amer. Meteor. Soc., Seattle, WA, Paper 1B.1. Recorded **Oral Presentation.**

Hagemeyer, B. C., and W. A. Ulrich, 2011: **The Impact of Strong Negative Arctic Oscillations on the 2009-10 and 2010-11 Florida Dry Seasons.** 19th Conference on Applied Climatology Amer. Meteor. Soc., Asheville, NC. P.35