

Real-Time Prediction of Major Atmospheric Indices by Various Operational NWP Centers

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Due to circumstances we do not fully understand, atmospheric variability projects preferentially onto a few large-scale geographically fixed patterns. These patterns have been determined by various techniques (EOF, teleconnectivity, etc.) and have been labeled PNA, NAO, AO and AAO, and are well known in the climate community. Since these modes explain a large portion of the variance, it would be of great importance for NWP models to forecast, with skill, the time series of expansion coefficients (hereforth called indices) for these modes. Using the same definition for AO, AAO, PNA and NAO as the Climate Prediction Center, we have monitored (for most of 2002) the NWP forecasts of these indices (out to 14 days in some instances) by four major operational centers, namely NCEP, ECMWF, UKMET and Canada.

Looking at the results for 2002, we find that the skill of forecasting these major indices by different centers closely tracks the overall skill performance of these centers using other verification scores. The ECMWF and UKMET perform better than NCEP overall, while the Canadian Center lags behind. We plan to discuss some case studies of extremely bad (busts) and extremely good cases for the NCEP model as compared to the other centers. Hopefully, this may give us some insight into systematic errors in our model and ultimately their correction.

In order to facilitate the diverse use of this information by customers, we have designed a web site : <http://wwwt.emc.ncep.noaa.gov/gmb/ssaha/> showing the multiple ways the results can be organized depending on customer's preference, namely on each page we have :

- 1) All indices for one center, or
- 2) All centers's analysis/forecast for one index, or
- 3) Several forecast leads for one center/one index.

Each lay-out gives plenty of information about skill over the last year as measured by the anomaly correlation score. Summary pages of skill, both graphically and in text form are supplied as well. The website is updated once a day in real time. Compared to existing displays at CDC and CPC, the novelty lies in ingesting results from other centers in real time (a super ensemble idea).