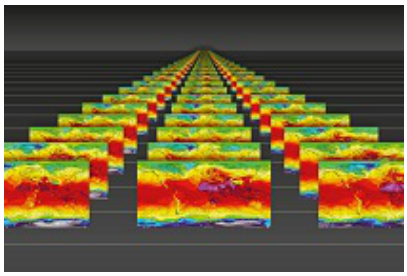

Contribution ID: **20** Type: **Poster presentation**

An Evaluation of Forecast Performance for North Atlantic Oscillation Onsets

By utilizing operational forecast products from The International Grand Global Ensemble (TIGGE) during 2006 to 2015, the forecasting performances of European Centre for Medium-Range Weather Forecasts (ECMWF), National Centers for Environmental Prediction (NCEP), Japan Meteorology Agency (JMA) and China Meteorological Administration (CMA) for the onset of North Atlantic Oscillation (NAO) events are assessed against daily NCEP/NCAR reanalysis data. 22 positive NAO (NAO+) and 9 negative NAO (NAO-) events are identified during this time period. For these NAO events, control forecasts, one member of the ensemble which utilizes the currently most proper estimate of the analysis filed and the best description of the model physics, are able to predict their onsets 3-5 days in advance. Moreover, the failure proportion for the prediction of NAO- event onsets is higher than that of the NAO+ event onsets, which indicates that NAO- event onsets are more difficult to forecast. Among these 4 operational centers, ECMWF has the best performance in predicting NAO event onsets, followed by NCEP and JMA, and then CMA.

The performance of the ensemble forecasts is also investigated. It is found that the ensemble forecasts could not improve the skillful forecast time for the onset of NAO events compared with the control forecast, regardless of whether the ensemble mean or the ensemble probability forecast is used. Therefore, the confident forecast of the NAO onset could only be achieved 3-5 days in advance.

Primary author: Dr DAI, Guokun (Department of Atmospheric and Oceanic Sciences & Institute of Atmospheric Sciences)

Co-authors: Prof. MU, Mu (Department of Atmospheric and Oceanic Sciences & Institute of Atmospheric Sciences, Fudan University, Shanghai, China); Prof. JIANG, Zhina (LaSW, Chinese Academy of Meteorological Sciences, Beijing, China)

Presenter: Dr DAI, Guokun (Department of Atmospheric and Oceanic Sciences & Institute of Atmospheric Sciences)

Track Classification: Workshop on Predictability, dynamics and applications research using the TIGGE and S2S ensembles