



## **Multi-decadal variability in predictive skill of the winter North Atlantic Oscillation in a new dataset of Atmospheric Seasonal Forecasts of the 20th Century**

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We present a new ensemble of atmospheric seasonal hindcasts covering the period 1900 to 2009 which provides a unique tool to explore many aspects of atmospheric seasonal climate prediction. In particular, this dataset allows us to revisit results from recent studies showing considerable success in forecasting winter climate anomalies like the over the Euro-Atlantic area in the past 20 to 30 years. We find that the recent decades (predominantly positive phase of the North Atlantic Oscillation) show indeed some level of skill in forecasting the NAO but that during the period 1950s -1970s (predominantly negative NAO), the forecasts were less successful, confirming studies using previous-generation models. The early decades of the 20th century, dominated by positive NAO phases, also show skillful forecasts of the NAO. Although these inter-decadal differences in skill remain only marginally statistically significant, the fact that they strongly co-vary with statistics of the general circulation itself suggests that such differences are indeed physically-based. We therefore stress the importance of testing current models over both periods of positive and negative NAO phases.