

The linear sensitivity of the NAO and Atlantic jet stream to SSTs

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We present a linear statistical-dynamical prediction system based on a large ensemble of atmosphere-only simulations driven by random SST patterns. This system is used to derive hindcasts of the North Atlantic Oscillation and eddy-driven jet metrics over the past century. This system demonstrates skill in winter, and to a lesser extent summer, and the linearity allows an exact attribution of the sources of this skill. This demonstrates the importance of the tropical Pacific and Indian Ocean regions for predictions over the North Atlantic, though there are also contributions from Atlantic SSTs. A particularly useful development is the finding of skill in predicting the summer NAO, although this skill demonstrates clear nonstationarity over the century.