

SESSION: (C3) Time scale interaction (includes teleconnections)

(C3-04)

Relating winter NAO skill to jet variability across timescales

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There has been encouraging progress in recent years in the skill of seasonal forecast models to predict the winter North Atlantic Oscillation (NAO). The NAO reflects a combination of variability in the strength and position of the North Atlantic eddy-driven jet stream. Here we investigate the NAO skill in operational hindcasts and a long, atmosphere-only re-forecast of the ECMWF system. This shows that the skill in these systems largely arises from predicting the position, rather than speed of the jet, on the interannual timescale.

As the timescale lengthens to decadal, the variability in jet speed makes up a larger fraction of the observed NAO variability. Hence, the predictable NAO signals on this timescale will have a different balance of mechanisms than the seasonal timescale, so that seasonal skill in a forecast system may not necessarily translate into decadal skill.

In addition, we show that the slow decadal variations in jet speed act to modulate the amount of jet latitude variability on subseasonal to seasonal timescales. Hence, the potentially predictable signals on the S2S timescales might be modulated by the decadal variability.