

CGD SEMINAR



DATE: Tuesday 19 November, 2019

TIME: 11 am – 12 pm

LOCATION: NCAR, 1850 Table Mesa Drive
Mesa Lab, Main Seminar Room

TITLE: Predictability of the North Atlantic
Oscillation

SPEAKER: Adam Scaife, UK Met Office

ABSTRACT:

This seminar reviews the latest evidence for long range predictability of the winter North Atlantic Oscillation (NAO) and hence European and North American winters. Retrospective hindcasts and recent real time predictions suggest that the winter NAO is predictable at seasonal and longer lead times. In this seminar I show that much of this predictability originates in the tropics and the stratosphere. High predictability of tropical rainfall is first demonstrated for current prediction systems and this is shown to lead to clear stationary Rossby waves that propagate into the extratropics, into the Atlantic sector and project onto the NAO. We estimate that this mechanism can explain around half of the forecast variance in the NAO. Secondly, we show that initial *atmospheric* conditions are also important for seasonal prediction of the NAO. Initial anomalies in stratospheric winds at the start of winter propagate downwards into the troposphere on subseasonal timescales where they lead to anomalies in the winter mean sea level pressure. Together, these mechanisms potentially explain the majority of forecast variance in the winter NAO. I also show some of the remaining errors in seasonal forecasts of tropical rainfall and discuss the unresolved signal-to-noise paradox, whereby ensemble forecasts are better at predicting the real observed NAO than they are at predicting their own simulations of the NAO.

Live webcast: <http://ucarconnect.ucar.edu/live>

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