MMM SEMINAR SERIES

Jet Regimes and the Predictability of Euro-Atlantic Weather
Kristian Strommen
University of Oxford

In recent years, numerical weather prediction models have begun to show notable levels of skill at predicting the winter North Atlantic Oscillation (NAO) when initialised one month ahead. Because the NAO gives a good first-order approximation of winter weather in Western Europe/eastern NA, this has garnered a lot of interest. At the same time, model predictions exhibit unusually low signal-to-noise ratios, in what has been dubbed a `signal-to-noise paradox'. We present a framework for understanding this paradoxical behaviour in terms of the regime dynamics of the trimodal, North Atlantic eddy-driven jet. It is shown that biases in regime persistence in models may be a key factor in producing the signal-to-noise paradox, and that this is likely in part due to weak transient eddy forcing in models. We also show that well known sources of predictability, such as ENSO, clearly project onto the regime structure. This provides a simple framework for understanding well-known non-linearities in Euro-Atlantic teleconnections in terms of preferential regime forcing.

Thursday, 21 April 2022, 2:00pm
NCAR-Foothills Laboratory, 3450 Mitchell Lane
FL2-1022, Large Auditorium

Seminar will also be live webcast
https://operations.ucar.edu/live-mmm
Participants may ask questions during the seminar via Slido.