

NAO related extreme climate events in a warming climate

Judith Perlwitz[†]; Martin Hoerling; Randall Dole; Jim Hurrell

[†] University of Colorado, USA

Leading author: judith.perlwitz@noaa.gov

The well-known leading patterns of co-variability between monthly Northern Hemisphere (NH) sea level pressure and monthly NH near surface temperatures is associated with the North Atlantic Oscillation (NAO). A suite of NCAR CCSM4 simulations is used to investigate how this co-varying mode may change in a warming climate. We address whether an anthropogenic increase of greenhouse gas (GHG) concentrations affects either the spatial structure and/or amplitude of the co-varying mode. We also examine whether the strength of the coupling is sensitive to GHG forcing. We further discuss the implication for the attribution for near surface temperature anomalies associated with extreme NAO events.