



## **Local responses to NAO-related large scale circulation under climate change scenarios**

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For the given radiative forcing and associated global warming, an important issue is to determine how are they locally projected across varying scales of space and times. The local projection is made via internal modes of atmospheric dynamics, such as the North Atlantic Oscillation (NAO). NAO manifestations span a wide range of temporal and spatial scales from several weeks to interdecadal intervals and from regional scale to Northern Hemisphere. Previous analysis demonstrated that nested regional climate models (RCMs) reproduce the details of observed NAO signal over Europe when driven by lateral boundary conditions from global climate models, which capture large-scale NAO variability. In this paper we investigate the NAO-related winter variability and predictability over Europe using a regional climate model (RegCM) driven by large scale fields from an atmospheric global model (HadCM3) under two IPCC scenarios (A2 and B2) for the period 2071-2100. In different climate conditions, both NAO and the way in which it is projected onto regional temperature and precipitation fields are changing. The changes are nonlinear and seem to be topographically modulated under the A2 and B2 conditions.