



Multimodel near-term predictions of the North Atlantic

W. Hazeleger (1), B. Wouters (1), G.J. van Oldenborgh (1), D. Smith (2), J. Kroeger (3), and S. Corti (4)

(1) KNMI, De Bilt, Netherlands (wilco.hazeleger@knmi.nl), (2) KNMI, De Bilt, Netherlands (wouters@knmi.nl), (3) KNMI, De Bilt, Netherlands (oldenborgh@knmi.nl), (4) Met. Office, Exeter, United Kingdom (doug.smith@metoffice.gov.uk), (5) ZMAW, Hamburg, Germany (juergen.kroeger@zmaw.de), (6) ECMWF, Reading, United Kingdom (Susanna.Corti@ecmwf.int)

We present the multimodel THOR decadal predictions of the subpolar Atlantic. The aim is to predict the Atlantic meridional overturning circulation. Because the overturning itself is not observed at decadal time scales, we focus on predicting oceanographic phenomena that are thought to be associated with the AMOC and that can be verified against long term observations. We use EC-Earth, DePreSys, MPI-M, and ECMWF prediction systems.

The multimodel predictions show good skill in prediction low frequency SST variability associated with the Atlantic Multidecadal Oscillation with lead times up to 9 years, in accordance with earlier studies. Also, subsurface characteristics in the subpolar gyre are well predicted up to 9 years in advance. We could not find clear predictability of Great Salinity Anomalies, but the Labrador Sea fresh water and heatcontent up to 700 m is remarkably well predictable. This predictability is much higher than in historical climate model simulations. Since the sea level pressure predictions do not show skill, this must be associated with oceanic processes.