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Multimodel Decadal Predictability of the Subpolar Gyre

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Multimodel decadal predictions made within the THOR project are presented. The THOR project focusses on the AMOC. The ocean analyses show that the AMOC may have increased slightly up to the 1990s after which a reduction took place associated with a reduction of Labrador Sea Water formation. However, the AMOC is not directly observed, hence the focus will shift to observed ocean phenomana. These include the Atlantic Multidecadal Variability, the interhemispheric dipole, Labrador Sea Water formation and the Great Salinity Anomaly.
It is shown that the interhemispheric dipole and the Atlantic Multidecadal Variability is predictable up to 9 years ahead. The upper ocean heat content is even better predictable. It appears to be hard to predict the Labrador Sea Water formation and the propagation of salinity anomalies in the subpolar gyre.
Finally, the predictability is partly originating from the external forcing by changing greenhouse gas concentrations and aerosols.