



Diagnosing overflow waters in the North Atlantic

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Danmark Strait overflow water (DSOW) and Iceland Faroe overflow water (ISOW) are important for the formation and transformation of deep waters in the North Atlantic. In this work the volume transport, variability, and pathways of DSOW and ISOW are diagnosed using the one degree ocean-ice coupled Norwegian Earth System Model (NorESM) that is forced by CORE2 inter-annual forcing. The oceanic component (MICOM) features an isopycnal coordinate that is referenced to 2000 db. The issues related to the coarse resolution such as the southward transport of ISOW to the western European Basin, the lack of overflow water in the western North Atlantic, and the western boundary detachment of the deep western boundary current are addressed. The effects of diapycnal mixing on the behavior of overflow descent at Denmark Strait and Faroe Bank Channel and its downstream evolution are examined.