

## **Supplemental Material**

## Local and Downstream Relationships between Labrador Sea Water Volume and North Atlantic Meridional Overturning Circulation Variability

Feili Li,<sup>a</sup> M. Susan Lozier,<sup>a</sup> Gokhan Danabasoglu,<sup>b</sup> Naomi P. Holliday,<sup>c</sup> Young-Oh Kwon,<sup>d</sup> Anastasia Romanou,<sup>e,f</sup> Steve G. Yeager,<sup>b</sup> and Rong Zhang<sup>g</sup>

<sup>a</sup> Division of Earth and Ocean Sciences, Duke University, Durham, North Carolina

<sup>b</sup> National Center for Atmospheric Research, Boulder, Colorado

<sup>c</sup> National Oceanography Centre, Southampton, United Kingdom

<sup>d</sup> Woods Hole Oceanographic Institution, Woods Hole, Massachusetts

<sup>e</sup> NASA Goddard Institute for Space Studies, New York, New York

<sup>f</sup> Department of Applied Physics and Applied Mathematics, Columbia University, New York, New York

<sup>g</sup> NOAA Geophysical Fluid Dynamics Laboratory, Princeton, New Jersey

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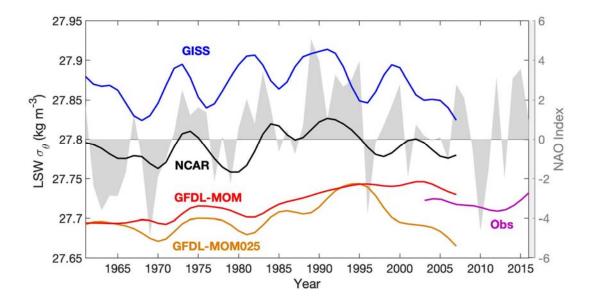
Corresponding author: Feili Li, feili.li@duke.edu DOI: 10.1175/JCLI-D-18-0735.1

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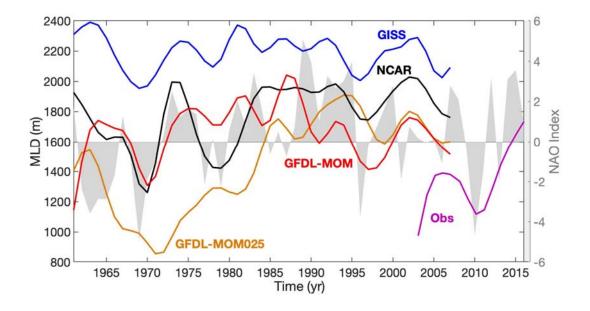
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	NCAR	GISS	GFDL-MOM	GFDL-MOM025
LSW $\sigma_{\theta}$	0.80	0.81	0.25*	0.57
MLD	0.75	0.61	0.61	0.46

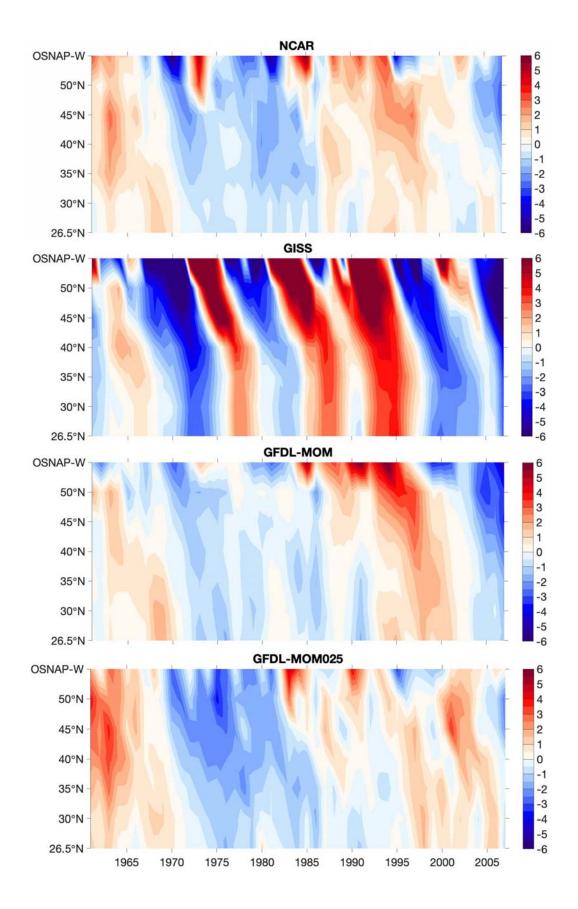
**Table S1.** Correlations versus winter maximum LSW volume at zero lag, based on the linearly detrended data. Values in black color indicate that they are the maximum correlations as well, even when the lag-correlations are considered. All correlations are significant at the 95% level except for those indicated by asterisk.



**Figure S1.** Winter-mean LSW density from all models and from the OA product. Plotted are 5-year low-pass filtered values. Gray shades indicate DJFM NAO index.



**Figure S2.** March-mean MLD in the Labrador Sea from all models and from the OA product. Plotted are 5-year low-pass filtered values. Gray bars are DJFM NAO index.



**Figure S3.** Hovmöller diagrams of linearly detrended annual-mean MOC (Sv) as a function of latitude and time. No filtering applied.