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On the variability of the DWBC transport between 26.5°N and 16°N in an eddy-rich ocean model and its implications for meridionally coherent changes.

Tobias Schulzki[1], Klaus Getzlaff[1], and Arne Biastoch[1,2]
[1]GEOMAR Helmholtz Centre for Ocean Research Kiel, Kiel, Germany (tschulzki@geomar.de)
[2]Kiel University, Kiel, Germany

The southward flow of North Atlantic Deep Water makes up the major component of the AMOC's deepwater limb. In the subtropical North Atlantic, it's flow is concentrated along the continental slope, forming a coherent Deep Western Boundary Current (DWBC). Both, observations and models show a high variability of the flow in this region.
We use an eddy-rich ocean model to show that this variability is mainly caused by eddies and meanders that are generated by barotropic instability. They occur along the entire DWBC pathway and introduce several recirculation gyres that result in a decorrelation of DWBC transport at 26.5°N and 16°N, despite the fact that a considerable mean transport of 20 Sv connects the two latitudes. Water in the DWBC at 26.5°N is partly returned northward. Because the amount of water returned depends on the DWBC transport itself, a stronger DWBC does not necessarily lead to an increased amount of water that reaches 16°N.
Along the pathway to 16°N, the transport signal is altered by a broad and temporally variable transit time distribution. Thus, advection in the DWBC cannot account for coherent AMOC changes on interannual timescales seen in the model.