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## Ventilation variability of Labrador Sea Water and its impact on oxygen changes

In a recent review paper we provided an overview of the changes of Labrador Sea Water (LSW) from observations in the Labrador Sea and the southern boundary of the subpolar gyre along a transect at 47°N. The strong connection with reduction/intensification of convection and reduction/intensification of oxygen supply in the LSW, due to reduction/intensification of ventilation was showed for the time period 1996-2016. Intense and deep convection like the one in the early to mid-1990s in the Labrador Sea, produced thick, dense and well oxygenated LSW, while weak convection like the one in the following years (1997-2005) produced shallower, thinner and less oxygenated LSW. The latter time period deep convection was resumed and starting in winter 2013/2014 production of denser, thicker and more oxygenated LSW was resumed. All these changes can be followed with some delay in the western boundary currents at 47°N along the pathway of the LSW. On multi-decadal time scales climate models predicts a weakening of the Atlantic Meridional Overturning Circulation (AMOC), followed by a weakening of convection and thus deoxygenation of the LSW. Here we will extend the analysis by including the latest cruises in 2017 and 2018.

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