

### **Minor comments from editor:**

Line 46: you introduced mWDW in Line 45, so also use that to start the following sentence (with MWDW), and remove the 'strongly modified' in Line 47 but rather say by how much, or to what degree that referred to mWDW was cooled.

Line 56: COSMUS expedition (no dash -)

Line 58 .... in the AABW production → for the AABW production ....

Line 59: I like to ask to change 'dramatically' to something quantifiable e.g. a 10 or 20-fold.

Line 59-60: remove the 2nd 'possibility', e.g. just cut ... the possibility ... in Line 60.

Line 61: the observed changes in the WDW temperature

Line 65: still add a reference to the ARGO program in the main text body too, eg also include World Ocean Database and the Coriolis project (<http://www.coriolis.eu.org>) in section 2.1, Line 65

In Figures 3, 4 and 5 add unit degree ° for locations, i.e. °W (in Figure text/legends and captions)

Caption Fig 6: the part: a-b) is a zoom-in of the highest temperatures at  $M_{slope}$ . Add to that: a-b) a zoom-in of the temperature range 0.1 to 0.85°C (i.e. the range that is shown there).

End of caption Fig 6: add the unit for EKE (EKE values, which are not normalized) in the caption

Figure 7: Given also the comment of R1, Prof. Dr. Heywood, this mooring temperature record upstream indeed does not show WDW, but mWDW, when  $-1.6^{\circ}\text{C} < T < 0^{\circ}\text{C}$  (or defined  $< -0.5^{\circ}\text{C}$ )? One can point out in the text when referring to Fig. 7 that one sees intermittently mWDW and ISW there (and not WDW). It will also help the reader to know what the (generally defined) divide is between WDW and mWDW properties in the literature; you could provide that already when introducing the water masses. Also, in subsection 4.1 the title to start with may be mWDW (instead of WDW)? Also, Line 141: is it mWDW or WDW or both? This (if you speak about mWDW or WDW, or both) could be checked and improved generally throughout the ms to clarify (e.g. already from the introduction, see also my comment above about Line 46).

**Allowed references:** for final publication, you cannot refer to a paper submitted (or in preparation, or almost submitted). For a final accepted publication in Ocean Science all references need to be published already, accepted for publication, or available as a preprint with a doi. Hence, the reference Darelius et al., 2023b and the sentence where this is referred to needs to be removed or modified.

### **Data availability**

Please make sure to make the data from mooring  $M_{slope}$  available when submitting the final ms version and add doi/reference in the Data availability statement.