

Interactive comment on “North Atlantic subpolar gyre along predetermined ship tracks since 1993: a monthly dataset of surface temperature, salinity, and density” by Gilles Reverdin et al.

Anonymous Referee #1

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This is an extremely useful and unique dataset, its great to see the authors publishing ship of opportunity data in a quality controlled and binned format. Overall, the presentation of the data and its context is very clear and accessible. The analysis is also sound, though the implications of the results is not thoroughly explored, which is fine given the format of the journal and the acknowledgement of the limitations of this dataset. The data itself is straightforward and easy to use. I look forward to seeing this become published and available.

Here are a few suggestions for improvement:

- The explanation of the finding the seasonal cycle (L147-151) is somewhat

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- opaque. The authors should clarify what "modified and adjusted" means and how the cycle connects to the Friedman et al. reference more explicitly.
- A table showing when each line was occupied and had TSG/bucket/ARGO/CTD calibration would be a useful quick reference.
 - It may be useful to provide access to the full bin locations rather than just the center point.
 - The abstract makes it seem as though there are only 2 transects. You may want to clarify that they have been split into several usable binned transects here.
 - The statement on L45-46 "The changes in these subsurface water properties and distributions drive ocean circulation and in particular of the Atlantic Meridional Overturning Oscillation (AMOC) variability" is debatable and I would remove or qualify it with a word such as likely or making reference to the fact that wind forcing is also a large player.
 - Data availability is printed in two locations (L24 and L293) not sure whether this is intentional.
 - The "ad-hoc" adjustment could be clarified (L346)
 - A few figures showing the comparison with Argo and other data discussed in Appendix A could be useful and strengthen the presentation.
 - Figure 1: The colors are mislabeled in the caption. Should be B-AX01 (red) and B-AX02 (black) I believe. Also, you may want to label G-AX02 on the figure.
 - It would be useful to see time series of the overlapping portions of the B-AX02 and B-AX01 data rather than just drawing the line through them in Figure 2.

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- Figure 3: The orienting map should be made larger, made into its own figure or combined with Figure 1.
- Figure 5: The statement "the EOF are such that 1 indicates that the EOF explains 100

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