First review of "New insights into the eastern Subpolar North Atlantic meridional overturning circulation from OVIDE" by Mercier et al.

This study is comprised of a comparison of the AMOC from Greenland to Portugal between four different "data-driven" products, ground-truthed against the long-running hydrographic section OVIDE. The authors present an interesting decomposition of AMOC variability into volume-driven and velocity-driven variability and analyze this decomposition on both seasonal and decadal time scales. They find that seasonal AMOC variability along this line is dominated by volume variability (i.e. changes in the depth of the isopycnal of maximum overturning), while decadal changes are mostly driven by velocity variability.

The manuscript is well-organized, clear, and the results are interesting and timely. The referencing and placement into the larger scientific context are appropriate. I recommend that it be accepted for publication after minor revisions, which are mainly targeted at improving the presentation of the results.

Minor comments:

L18: The authors should consider explicitly mentioning the isopycnal of maximum overturning in the abstract. It is not immediately clear to the reader who is not yet familiar with the formalism that changes in volume are due to changes in the depth of the isopycnal of maximum overturning.

L60: Recommend adding "with" after the comma.

L75: (Figure 1 caption) Consider adding the time period over which AVISO is averaged.

L118: Missing "depth" at the end of the line.

L139: The extracted dataset should be made publicly available and the citation provided in the data availability section.

L147: Typo in GloSea. Recommend rewriting "in perspective with…"

L166: It would be helpful to explicitly refer to the publication that details the OVIDE inverse method formalism.

L173: Section title and beyond: Should this be "MOC" rather than "AMOC" as it is referring to overturning strength at one latitude (expectation from L43). In general AMOC and MOC are used somewhat interchangeably in the main body of the text after a specific expectation is set up in the Introduction.

L181: referred → referenced

L236: Recommend removing “in this case” and specifying that this calculation is for the cross-correlations.

L257: Please elaborate on the standard error calculation for the seasonal cycle.

L285: (Figure 2) Can the authors make the y axis for ECCO the same as the others so that they are easier to compare?

L387: Unclear what is meant by “As in the first order”.

L400: (Figure 7) It is difficult to distinguish the cyan and blue lines. This comments also applies to Figures 8 and 10.

L405: (Figure 8) Can you explain why there is a significant contribution from the eastern boundary current in Figure 8f but this is only apparent in GloSea5 in Figure 3?

L459: This is the first mention of the ASTE product (it may be left over from a previous version and should be removed).

L460: Recommend starting a new sentence after ECCO. Suggestion for starting the next sentence: “At the same time, ECCO is the only…”

L462: Please elaborate on/clarify the differences between how OVIDE and OSNAP handle the net transport across the line.

L470: Recommend removing “Thus,”

L500: “Noteworthy” is unclear here, could be replaced with “We find that” or “A new and noteworthy result is that”

L526: It is potentially also worth discussing the connection to seasonal density variations in the EGC in the context of the comparison with Li et al. 2019, not just decadal.

L534: de Jong and de Steur (2016) should also be discussed in the context of Irminger Sea convection (or at least referenced in conjunction with Irminger Sea convection somewhere).

de Jong, M. F., and L. de Steur (2016), Strong winter cooling over the Irminger Sea in winter 2014–2015, exceptional deep convection, and the emergence of anomalously low SST, *Geophys. Res. Lett.*, 43, 7106–7113, doi:10.1002/2016GL069596.

L541: It looks like the total overturning variability is also positively correlated with the NAO, not just the components. Could the authors please discuss whether this is the case?