

Interactive comment on “Structure and drivers of ocean mixing north of Svalbard in summer and fall 2018” by Zoe Koenig et al.

Ilker Fer

ilker.fer@uib.no

Received and published: 5 October 2020

We will submit a detailed point-by-point response to all reviewers' comments when the discussion closes. The first author, Zoe Koenig, is presently on the MOSAiC expedition with limited internet access. Ilker Fer coordinated with Zoe to get the first response to reviewer 1's comments, for the sake of discussion.

Thank you very much for your very helpful and thoughtful comments. We will take them into consideration when preparing the revised version. We will improve the text following your comments, checking that the numbers match and are consistent throughout the text, adding clarification where needed, and considering the new references suggested by the reviewer.

Printer-friendly version

Discussion paper



In the revised version, we will restructure the introduction and the discussion as suggested. We will rearrange the introduction paragraph that describes the different sources of mixing in the Arctic Ocean. We will merge both paragraphs (l.31-37 and 38-46) and we will first summarize the different sources of mixing and then go through their intensity.

In the discussion, we will delete subsection 7.2 ‘Impact of the melt water on the near-surface mixing’, as we agree that our results do not contribute much to that section.

We will change the title of subsection 7.1 to ‘Estimates of tidally-driven dissipation rate in the Eurasian Basin’ as we do not show pan-Arctic estimates.

Regarding section 7.3 ‘Atlantic Water heat loss’, we agree that it looks more like a literature review and that our results are not linked appropriately to the actual discussion. We will rearrange this subsection completely. We agree that the sentence l.433 is ambiguous. We found that turbulent vertical mixing represents less than 10% of the total heat loss of the Atlantic Water layer, but indeed we do not specify where the heat is lost, so these 10% are not to be compared with the percentages from Ivanov and Timokhov (2019). We will clarify this notion. Although the subsection resembles a literature review, we intend to retain it, but we will link it better to our findings.

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2020-77>, 2020.

[Printer-friendly version](#)[Discussion paper](#)