

Summarize the main results of the article in a few sentences:

By using Mesoscale eddies Atlas and satellite SSS data, they found that cyclonic and anticyclonic eddies show different trends in salinity structure. Anticyclonic eddies are equally mono and dipolar salinity structure, while cyclonic ones are found to be mostly dipolar. They also show that monopolar structure corresponds more often to a negative salinity anomaly.

Answer the following questions about the structure of the paper:

Overall content:

1. Is the overall purpose of the study and /or central question clear?
Yes, they want to characterize the salinity structure in mesoscale eddies.
2. Does the interpretation of the findings answer the overall question of the paper? *Yes.*
3. Is every paragraph and sentence in the paper relevant to the overall question? *Yes.*

If no, point to some examples:

4. Are there portions of the text that could be omitted? *Yes. At the end of the conclusion Maëlle repeat a part of the introduction.*

If yes, point to some examples: Knowing the structure of eddies is important because they play a role in the transport of salinity anomalies. This transport is associated with heat and fresh water fluxes, and is hence important to understand the general circulation and its impact on the climate. (p.3 penultimate paragraph)

5. Is the overall organization of the paper clear and effective? **Generally, yes but the separation between the Method and Results part is not distinct. We found some results in the method parts.**

Suggestions for improvement:

Individual sections:

1. Does the title adequately represent the content of the paper? **Yes.**

Suggestions for improvement: In the whole article they are talking about salinity « structure ». The word « signature » appears just one time in the text. I suggest to take the more used word to be more relevant and coherent with the article.
“Salinity structure of Agulhas mesoscale eddies” instead of “The salinity signature of Agulhas mesoscale eddies”.

2. Does the abstract clearly and concisely summarize the paper and state the main results? Does it contain all needed information (context, need, task, object, findings and conclusion)? **Here the abstract clearly summarizes the context, need, method except the main results.**
3. Does the introduction provide enough context to the readers? Does it state the need for the work? Does it state clearly what has been done to address it? **The introduction provides a clear and sufficient context, but the need is missing. However, the last paragraph of the introduction states what has been done.**
4. Does this paper put the progress it reports in the context of existing published work? Is there adequate referencing and introductory discussion? **Yes.**

5. Are the material and methods used in the study clearly explained? Can you point out what is special, unexpected, or different in the approach compared to existing published work? Does it contain too many technical details?

Generally, yes but sometimes it is not specified how they proceed. (ex: "...we performed a rotation followed by an interpolation...", 4th paragraph of the p.2) We don't have any detail on how they did to rotate and why they have to do that. Furthermore, there is no definition of what is exactly OI2 field and also a composite.

6. Is the results sections(s) clearly and concisely written? Are there logical and smooth transitions between sections, subsections and between paragraphs?

Yes.

7. Does the conclusion clearly state the most important outcome of the work? Does it address the questions stated in the Introduction? Does the conclusion just summarize the results or does it interpret the findings and explain what they mean? Yes. Yes. Here the conclusion just summarizes the results. There is no interpretation but they just said that their founded structures reflect the modality of transport of SSS by eddies. That answers a part of the questions stated in the introduction.

8. Are the interpretations and conclusions adequately supported by the evidence presented? That is, are the assumptions valid, is the methodology sound, is the evidence adequate, and do the conclusions logically follow?

They look at characterizing salinity structure in mesoscale eddies. They use both eddies atlas and satellite SSS data and deduce the salinity anomaly for each eddy and then, they classify them. Their methodology seems to be adequate and the following conclusion is logical regarding what they found.

9. Are all parts of the text, references, graphics and tables necessary for the new results and main points to be understood? **Yes.**

10. Are the graphics and tables clear and their captions self-explanatory?
Need some axis and colorbar label for figure 2 ad 3. In Table 1 we don't have information on what m+ and m- are referred to. We have to deduce from the text that in fact, it corresponds to positive or negative salinity anomaly. Otherwise, captions are clear and sufficient.

• Sentences and Wording

1. Can you find grammatical mistakes? **No.**

2. Can you point to sentences that loose you (too long/complex) and do you have suggestions for improvement?

"We focused on the eddies from 2016, the first year with data from SMOS available for the whole year." (p.2 end of paragraph 2)

I don't understand what is the main point in this sentence.

3. Are generally the action in verbs, characters in subjects and subjects near verbs? Can you find counter-examples? Can you point out misused nominalizations? **Yes. No.**

4. Is the writing cohesive? Does it flow well? Is the part of the sentence that links to the previous sentence at the beginning or the end?

In my opinion this article is well readable and understandable.

5. Are the paragraphs coherent? Do the first and last sentences of paragraphs match? Can you find counter-examples? Absolutely.

6. Is there an abusive use of passive voice? No.

7. Can you find a lot of useless words/phrases?

"Therefore", "We then..."

8. Can you find complex words that could be replaced by simpler ones?

Synoptic (p.2 first paragraph)

9. Can you find too complex subjects? **No.**

10. Can you find inadequately used adverbs/ repetition/ excessive hedging? **No.**

11. Is the use of tenses (past/present/future) adequate? **Yes.**

- **Other comments?**