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

This article explains an alternative method to determine physical water column properties in a rich biological environment by linking acoustic observations to Conductivity Temperature Depth measurements.

On the one hand, it is possible to calculate Mixed Layer Depth thanks to CTD data. Compare this calculation to the 38 kHz frequency permits to conclude about the MLD properties. It could be a limit of an acoustic layer such as the bottom of the mixed layer. This result needs to be more explored by using higher frequency to recover clearer acoustic structure and delimitate isolate acoustic layer.

On the other hand, construct a Thorpe length scale permits to identify turbulence areas which are associated to blurred acoustic responses with higher L_t. To complete these properties, it is possible to consider a comparison between the L_t used in this article and the ones from the CTD measurements. Moreover, a mathematical model would permit to better distinguish stratified and blurred environment.

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?

   The overall purpose of the study is clearly explained. In the title, the reader could easily understand that it is going to be a multi-disciplinary article (biology & physics). In the abstract, the use of subtitles (context, aims, methods and results) permits to follow the entire procedure of the article and it is completed by the last paragraph of the introduction which reminds the reader about the different steps of the study.

2. Does the interpretation of the findings answer the overall question of the paper?

   For me, the interpretation of the findings answers the overall question of the paper with a logical approach. Nevertheless, the Methods part could be clearer (**example:** words are missing, not in the good order…).

3. Is every paragraph and sentence in the paper relevant to the overall question?

In the paper, every paragraph and sentence seem to be relevant to the overall question, but I think that some information could be removed (question 4).

If no, point to some examples:

4. Are there portions of the text that could be omitted?

According to me, some portions of the text could be omitted.

If yes, point to some examples:

- **Paragraph 4:** feasibility
- **Paragraph 6:** Echosounders that were […] was τ = 0.3 ms.
- **Paragraph 7:** Sv is mean […] vertical axis respectively.
- **Paragraph 8:** device at 700 m away, in the ship's wake.

5. Is the overall organization of the paper clear and effective?

The overall organization of the paper is clear and effective. As mentioned in question 1, the abstract starts with a good overview of the different sections (context, aims, methods and results). The same structure is used in the Results and Conclusion parts which is composed of subtitles and bullet points. It avoids the reader to be lost and permits to be focused on a specific idea previously explained. Moreover, the annotations made for the unknown vocabulary is helpful and a good complement of the content.

Suggestions for improvement:

Individual sections:

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

The title adequately represents the content of the paper and in particular its multi-disciplinary use. I would perhaps, add the name of the oceanographic campaign from which we used the data. Moreover, I do not understand what the "I. Feasibility and first results" refers to.

Suggestions for improvement:

Listening fish to recover ocean's physical properties with the MAD-RIDGE cruise

2. Does the abstract clearly and concisely summarize the paper and state the main results? Does is contain all needed information (context, need, task, object, findings and conclusion)?

   The abstract clearly and concisely summarize the paper and state the main results (question 1) by mentioning all the needed information to well understand the article content.

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?

   For me, the introduction provides enough context to the readers. We understand the meanings and interests of this article according to what was done before and what will be done.

4. Does this paper put the progress it reports in the context of existing published work? Is there adequate referencing and introductory discussion?

   This paper is using previous studies to answer its problematic. Older methods are introduced in the article and more details are available to the reader by using the mentioned references.

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?

   The Methods part could involve some confusions for the reader because of incomplete sentences (question 2). Nevertheless, I think that the content is written in a logical order and easily accessible to the reader who can understand it without too many technical details.

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

   The Results section is clearly and concisely written with logical and smooth transitions. The presence of three subtitles (question 5) which follow the previous parts order (mentioned in the abstract and introduction) help to have a clear overview of the results.

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?

By using bullet points (question 5), the conclusion is easy to read. It reminds us what was the goals of this study, what we obtained and how the results could be improve in the future.

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?

   The adopted methodology permits to obtain evidence which are well interpreted and permitted to clearly conclude about the study. Nevertheless, I would rephrase or add information to intensify the link between the Methods and results Parts.

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

   References, figures and captions are good complements to illustrate this article. Maybe, the Figure 1 could have a separate caption for the two different illustrations (Figure 1a & Figure 1.b).

10. Are the graphics and tables clear and their captions self-explanatory?

    The graphics and their captions are self-explanatory but too small.

• **Sentences and Wording**

1. Can you find grammatical mistakes?

   I read many times the word biological (respectively acoustical) for which I would right biologic (respectively acoustic).

   Generalities:
   - **Paragraph 3:** water column by using acoustic observations
   - **Paragraph 3:** thin
   - **Paragraph 3:** plans
   - **Paragraph 6:** resolutions
   - **Paragraph 8:** observations
   - **Paragraph 9:** turbulences
   - **Paragraph 9:** latitudes
   - **Paragraph 9:** instead of
   - **Fig. 1:** the time of the day
   - **Paragraph 17:** criterion
   - **Paragraph 17:** biases
   - **Paragraph 18:** criterion

Tenses:
- **Paragraph 3:** showed
- **Paragraph 5:** shown
- **Note 4:** reemits
- **Paragraph 13:** defined
- **Paragraph 14:** the most
- **Paragraph 16:** for a depth
- **Paragraph 18:** response and a "blurred"

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

   I have adapted sentences that I found too long or too complex. These are my suggestions:
   - **Paragraph 3:** They […] echosounders. It allows to probe [..] ecosystems.
   - **Paragraph 3:** The main […] acoustic observations. They are easier […] vertical plan.
   - **Paragraph 4:** In this study, we develop an assessment of such a method.
   - **Paragraph 11:** On the contrary, when the differences are lower than the threshold value, they are rejected and […]
   - **Paragraph 16:** Put "Both are radials are during the day." into the caption of Figure 3.
   - **Paragraph 17:** Many biases must be considered. The most important one is due to the L_t calculation. This method brings into account two contributions: vertical and horizontal due to the scanfish trajectory.
   - **Paragraph 18:** […] we need to use higher frequency.

   Nevertheless, I did misunderstand these few parts of the article:
   - Using too much "one(s)" – finally, we do not know what we are talking about:
     o **Paragraph 10:** A comparison […] ordered one
     o **Paragraph 11:** Based on […] density profile
   - **Paragraph 11:** false detection of overturns? → More explanation by using one or two sentences with simpler words.
   - **Paragraph 11:** A significant […] random noise.
   - **Paragraph 11:** within a radial?
   - **Paragraph 18:** lying?

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?

In this article, I sometimes found a wrong order of the words in the sentence (question 2) but I did not detect misused nominalizations.

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?

   According to me, the writing is cohesive: sentences begin with old information and end with new ones in a logical way. The article in its globality flows well but some reading comprehension difficulties are presented in the Methods part (question 2).

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

   The order of the information presented in this article are coherent.

6. Is there an abusive use of passive voice?

   I did not notice any abusive use of passive voice.

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

   In this article, I did not find a lot of useless words or phrases (question 4) – no transition words.

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

   I read several times the world *threshold* but instead of using it, I would prefer to replace it by *limit* which seems less technical but easily understandable.
   - **Paragraphs 1 & 5:** metric → method
   - **Paragraph 6:** thanks to → by using
   - **Paragraph 10:** verify → check
   - **Paragraph 18:** cruise → survey

9. Can you find too complex subjects?

   I do not think that there are complex subjects, but it could sometimes be difficult to find the right one in the sentence because of the order of the words (question 2).

10. Can you find inadequately used adverb/ repetition/ excessive hedging?

   I did not find inadequately used adverb, repetition or excessive hedging. Nevertheless, I thought about some alternatives to try to simplify the reading comprehension (question 8).

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

Generally, the use of tenses seems adequate, but I have some suggestions mentioned in question 1.

• **Other comments?**

To conclude, this article clearly mentioned a correlation between biology and physics – importance of multi-disciplinary. It is written without too complex vocabulary or scientific explanations, but the Methods part could be improved. Indeed, in this part, reading comprehension is sometimes compromised but a simple rephrasing would solve it.