

Response to editor comments for the manuscript: “Array processing in cryoseismology: A comparison to network-based approaches at an Antarctic ice stream”

We thank the editor for their additional points that improve the clarity of the manuscript and address some typographical errors and data availability comments. Below is a detailed response to the editor’s comments, stating exactly how we have addressed their points. **All our responses are in red.**

Editor comments:

[Fig. 7]

Both, a reply and correction in regard to the following remark by the Reviewer are missing.

Apologies for this. Please see the response we should have included previously.

“Figure 7: ?? in caption. For an analyst it would be very difficult to visually associate these arrivals. I suppose the slowness filter ratio and the requirement of similar back-azimuth makes the association unambiguous for these examples (?). Plotting these examples on the more distant network stations would probably make it easier to verify that these phases belong together based on the move-out.”

We have dealt with the reference issue that caused the ??. Indeed, the slowness filter ratio and back-azimuth requirement make the association as unambiguous as possible, although there is obviously still a chance that phases are mis-associated. We are really pushing the capability of the technique here, and that is hopefully communicated in the text. We choose not to plot the moveout as the events are typically far from all the stations, not just the inner array stations, so would all look very close together and therefore not be very diagnostic. Hopefully that is ok.

Moreover, please re-check the necessity of 2 arrows. Secondary lines are pointing from subplots (d; short) & (c; long) toward (a), which look redundant to me.

Good point – sorry for this. We have now removed all superfluous arrows.

[Line 398: “DOI tbc”]

I am sorry to be picky, but according to our data policy, the data should be openly available and provided with a DOI in the reference list. I have seen many data statements like this and, on several occasions, have never heard back from the authors after asking the whereabouts of their data.

Quite right to be picky. Its really important that data is openly accessible. Apologies that we didn’t update this. All the data is now on IRIS and the correct DOI is provided in these statements now.

[Line 97]

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- the second parenthesis seems to be in bold for no reason.

The $()$ here around the \mathbf{u}_i are not needed, but the bold type is needed, as this parameter is a vector (of length 3). See on the RHS of the equation that we have $u_{x,i}$, $u_{y,i}$. We have therefore removed the $()$ but retain the bold type. Hope that makes sense.