

## Response to Referee #2 Comments

We would like to thank Referee #2 for evaluating our manuscript and for providing constructive feedback. We are currently working on adjusting some of the language in the paper as recommended by the reviewer and respond to specific comments below. We show referee comments in [gray text](#) and provide our response in [blue text](#).

---

**Referee #2 Comment** on "Spring 2021 sea ice transport in the southern Beaufort Sea occurred during coastal ice opening events" by Jewell et al., EGU sphere [preprint], <https://doi.org/10.5194/egusphere-2024-1097>

**Citation:** <https://doi.org/10.5194/egusphere-2024-1097-RC2>

### Summary:

This paper analyzes the drift of a tight array of GPS buoys in the Southern Beaufort Sea in response to wind speed and direction. This paper is generally well written, and I recommend acceptance after very minor revisions. Most of my comments are suggestions on grammar and style.

### Details:

1) Lines 12 and 15: These sentences imply that lead opening causes increases SBS ice motion, but I would argue that both the lead opening and increased ice motion are both a consequence of favorable winds away from the coast. I suggest rewriting this as "These results quantify the disproportionate contribution in offshore winds towards breaking the sea ice away from the coast, lead opening and SBD ice transport during Spring 2021, ...". While this idea may not be new, this paper discusses these processes in wonderful detail that warrants publication of these results.

[We thank the reviewer for this feedback. Noting that another reviewer also pointed this out, we understand this reads as "lead opening causing sea ice motion." As we do not want to suggest this is the case, we will incorporate the suggested re-phrasing into our revised manuscript.](#)

2) Line 48: suggest rewriting this as "The consolidated season in the Beaufort Sea extended through March and April 2021..." Since the subject here is the "consolidated season", rather than March and April.

3) Line 50: Delete "During the consolidated season, ". Too wordy.

4) Line 51: Change “Of sufficient magnitude, these internal stresses can”, to “The internal stresses can be of sufficient magnitude to cause the ice pack...”

We thank the reviewer for grammatical suggestions 2-4, and will shorten and re-arrange these phrases accordingly.

5) Lines 57-58: Rather than “that lose and remain”, I think the authors mean “that is loose and remains”.

While we did originally mean “that lose and remain,” we realize this sentence is redundant with more clear explanations that follow, so will remove it in the revised manuscript.

6) Tschudi et al. 2019b paper should be cited in Figure 1 caption or in the Data section.

We thank the review for this suggestion. While we cited the data product, we had not cited the associated paper (<https://doi.org/10.5194/tc-14-1519-2020>) and will make sure to include this in the revised manuscript. We will add this to the body of the text where the sea ice age record is first referenced.

7) The first paragraphs of new sections aren’t indented. Is this the preferred style of the journal?

We are using the template provided by the journal, though formatting does change between the initial submissions and final published manuscripts.

8) Line 246: Suggest change “just” to “only”.

We will make this adjustment in the revised manuscript.

9) Lines 296 and 301. I suggest West-Northwesterly rather than repeat the “erly” suffix.

We appreciate this suggestion to shorten the named wind directions and will edit accordingly.

10) The supplemental movies are wonderful! Lots of insight/information buried in these beyond what is discussed in the paper. I can see these being used/cited in many papers/presentations on sea ice.

We thank the reviewer for this reflection, and were excited to share them so they could also be used by others who will have additional insights beyond our own about all the information these observations provide.