

Answer to the Editor

Dear Editor,

We thank you and the reviewers for your kind words and your help improving our manuscript. We have now addressed the remaining points and we are happy to submit a new revised version of our manuscript, which we hope will be found suitable for publication.

Best regards,

Jean Rabault and co-authors

Answer to reviewer 1
(recommendation: “accepted as is”)

These revisions have indeed made the paper more clear, though I continue to find the process-of-elimination style to be cumbersome for the reader.

Style aside, I continue to think that the main result is a factor of two change in the effective attenuation rate of the waves ice that occurs on a 12 hr cycle. This produces a factor of ten change in the wave heights measured. I understand that the attenuation rates are not well-constrained by the observations, and I did not mean to suggest that the authors attempt to tune their models to reproduce the attenuation specifically. Instead, I was hoping for a reframing that tidal convergence / divergence of sea ice can cause moderate changes in attenuation processes that in turn cause large changes in observed wave height. I suspect that other readers may now draw the same conclusion-- but they will have to work for it.

We want to thank the reviewer for their appreciation of our work. We agree that we can make this conclusion and chain of thoughts even clearer, and this is now added more explicitly into the discussion and conclusion through several additional sentences.

Answer to reviewer 2

(recommendation: accepted subject to technical corrections)

The authors have made significant changes in response to my comments and I believe the paper is now much improved. I am happy to recommend the paper is accepted for publication after some minor corrections listed below are implemented. I would like to praise the authors for the work they have put in towards the publication of their results.

We want to thank the reviewer for their kind words and their in-depth reviews of our work, which has helped significantly improve the quality of our final manuscript. We have answered the remaining points and updated the manuscript accordingly, see below.

Minor comments (line number refers to track-changes version of the manuscript):

- l87-92: Please rephrase these sentences so they don't start with "See ..."

Done.

- Fig 6: Having individual captions for each panel is a little weird. Why not have a single caption for the whole figure, referring to each panel, which is more standard. I'm just pointing this out and will let the journal editor/publisher decide whether this is appropriate.

Thank you for your comment. We believe this is largely a question of taste, and we like quite well the split between "detailed subcaptions" under each panel, and "high level caption" below all. This is, in our opinion, more convenient when permalinks are provided. So, we plan on keeping this as is if not there is an issue with the journals template.

- l285: I'm not sure "waves-in-ice interaction mechanisms qualifies as "well-known physics".

We are fine removing "well-known physics", done.

- l293: the report can be included in the ref list I imagine. Also please rephrase "reported in a report"!

The report is now a reference instead of a footnote, and we have fixed the formulation.

- Eq (5): SWH missing in the first term on the numerator.

Thank you for pointing this typo, this is now fixed.

- Sections 3.2 and 3.3 are now very short. I suggest removing them and incorporating the corresponding statements in section 3.1.

We agree that these sections are now very short since, as suggested by the authors, their contents have been moved to Appendixes. However, we believe that they do not belong well to section 3.1 from a "logics" perspective, so we would like to keep them separate as is now.

- I609: The authors make excessive use of "per se". Most of the time, this is not needed, so I suggest removing.

Thank you for pointing this out. We have removed some of the "per se" and kept some others, depending on how much we want to keep the emphasis on the points we make.

- I720: I suggest using Δx , instead of dx , as dx is a differential which has a specific mathematical meaning.

Fixed, and same for Δt where we changed to Δt to be consistent.

- I974-975: what's the difference between closedness and compactness? Both of them are used throughout the manuscript. I suggest sticking with one for consistency.

We agree that there is no good reason to use two distinct words - we have changed to using "closedness" everywhere.