

Review of “Observing sea ice flexural-gravity waves with ground-based radar interferometry” by Dammann et al.

General comments

I think the authors handled my comments appropriately. I am looking forward to a longer continuous time span of measurements with a GRPI, because it seems promising. I only have one last comment and a few technical corrections.

Specific comments

In line 420 it is stated that more analysis is required to investigate potential applications like determining wave properties that can lead to fracture and destabilization. In the first paragraph of the introduction some properties of IG waves in ice are mentioned and that waves can induce fracture and break-up. However, I see no explicit reference that IG waves, considered in this paper, can cause fracture and break-up.

Technical corrections

Line 39-42: Rephrase these two sentences to include satellite radar altimetry (it is described in the Collard et al. (2022) paper as well).

Line 56: “we here” → “we demonstrate in this paper” or something comparable.

Line 98: “The observations are interpreted as coming from a narrow (one-dimensional) strip, as ... azimuth” or something similar.

Line 105: “convert to...” something wrong with the sentence.

Line 107 and line 108/109: Subsetting on coherence appears to happen twice. Remove from one sentence.

Line 198: Here and on some other locations “ice-covered” like in the previous sentence.

Line 211: “We also model”

Line 271: Start with “Although...”

Line 384: “likely due in part to”, rephrase

Line 415: “resulting in different wave propagation” feels like something is missing, please elaborate

Line 415: “particularly powerful”, maybe tone down the sentence a bit: particularly useful or suitable

Line 417: "Here, future deployments..." This sentence looks vague, rephrase. What does "here" refer to?

Line 420: "determine wave frequencies and amplitudes" → "determine wave properties"

Supplementary material: units on the axis are missing