

Response to Editor: Automated detection and analysis of surface calving waves with a terrestrial radar interferometer at the front of Equip Sermia, Greenland

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1. Sorry for not giving a more specific critique of what's needed for figure 6. The manuscript needs to make clear the difference between the average wave power index (6b) and the cumulative wave power index (6c). As I read the manuscript, the cumulative wave power index is just the wave power index times the number of observations, but since the relative values are different, this would appear not to be the case. Likewise, it is not stated in the text how the standard deviations for 6c are calculated, (are they spatial standard deviations? What does it mean to present the standard deviation of a set of points on the same scale as a cumulative value?) This needs to be obvious in the text, without the prompting you gave me in your response. **We fully agree and realized the manuscript was lacking a clear explanation of the temporally and spatially cumulated WPI values. The temporally cumulated WPI is not the WPI values times the number of observations, which would indeed give the same distribution than for the temporally averaged WPI. This variable is in fact the sum of the WPI values through time. The temporally cumulated WPI is therefore quantifying a combination of the number of events and their intensity, while the average WPI is normalized by the number of events hence insensitive to the latter. Looking at Figure 6b, one can see that the WPI is on average a bit higher in the deep sector than the shallow sector. This is clearer when looking at the temporally cumulated WPI (Figure 6c) as more waves were detected in the deep sector and with a higher average WPI, both variables contributing to a larger difference in temporally cumulated WPI between the two sectors. We therefore added a description of the variables processed from the catalog of WPI values right after the description of the algorithm (L136-139). In this way, the variable computation is clear to the reader before any result is presented. We also explained the different results obtained with temporally averaged WPI and temporally cumulated WPI in the Results section (L187-191). We further realized the temporally and spatially cumulated WPIs were referred to as "cumulated WPI" few times in the manuscript. We therefore replaced this general term by the full variable name wherever needed. We finally precised that the WPI presented in Figure 6b is temporally averaged (caption of Figure 6), just as the cumulated WPI. We now think those different modifications made the use of sector-averaged values computed from temporally stacked (averaged of cumulated) variables clear and unambiguous.**

2. "All the differences presented above have been determined to be statistically significant using a t-test yielding p-values below 0.001 and t-statistics from 3.4 to 21.1." To use a test such as this, you need to specify what quantities are compared, what null hypothesis is rejected by the test, and what values are assumed to be independent. An editor's null hypothesis is that a t test is being used incorrectly, and this null hypothesis needs to be disproven with well presented evidence. **We specified what quantities are compared, what null hypothesis is rejected by the test, and what values are assumed to be independent at L193-195.**