

Author's response to reports after major revisions of “Inconclusive Early Warning signals for Dansgaard-Oeschger events across Greenland ice cores”

Suggestions for revision in Report #1:

Line 269: “At 95% confidence, one such simultaneous increase is expected (Fig. 3(c) and A3(c)).” I find this combination of the 95% confidence threshold and the number of “expected” EWS confusing. My understanding is that, under the null hypothesis, the expected number of (false positive) EWS would be a decimal value slightly greater than zero. This sentence should perhaps instead read “... one such simultaneous increase is statistically significant...”.

Answer: We thank the referee for spotting this confusing statement and agree. The sentence has been reformulated as suggested to “At 95% confidence, one such simultaneous increase is statistically significant (Fig. 3(c) and A3(c)).”

Line 422: “...whereas GISP2 in 20-year resolution the most EWS...”. A word is missing here between “resolution” and “the”.

Answer: We corrected this to “...whereas GISP2 in 20-year resolution shows the most EWS...”.

Line 438: “There is further no common significant increase in neither the autocorrelation, nor the local Hurst exponent across the different resolutions of the NGRIP record.” This sentence is unclear due to the use of a double negative. It would read better if the words “neither” and “nor” were replaced with “either” and “or”. Alternatively, this sentence would make better sense if rephrased as follows: “Further, neither the autocorrelation nor the local Hurst exponent show a common significant increase across the different resolutions of the NGRIP record.”

Answer: We rephrased this sentence as suggested.

Line 508: “While these discrepancies between the signal do not necessarily influence the EWS considered here, they are remarkable and indicate important regional variations, given their geographical proximity...”. This sentence is currently unclear. I would suggest that “signal” be changed to “signals”, and that “their geographical proximity” be changed to “the geographical proximity of the ice core sites”.

Answer: This sentence has been changed to “While these discrepancies between the signals do not necessarily influence the EWS considered here, they are remarkable and indicate important regional variations, given the geographical proximity of the ice core sites ...”.

We thank John Slattery for his comments and the very valuable feedback to this manuscript.

Suggestions for revision in Report #2:

I thank the authors for their thorough revisions, the manuscript has greatly improved. I especially appreciate the additional explanation of the method modifications, the comparison to the restoring rate λ and the new figures 6-8.

[Answer: We thank Marlene Klockmann for her comments and the very valuable feedback to this manuscript.](#)

I have no further comments except a very minor one:

L.98-101: it seems that stadials (GS) and interstadials (GI) got confused here? Should it not read "Hence, future changes might be more comparable to past transitions from GI to GS, rather than DO events with changes from GS to GI, during the last glacial period. Past GI-GS transitions, as those shown in Fig. 2, occurred more gradually [...]" ?

[Answer: We agree that GS and GI got confused in this sentence and corrected it accordingly.](#)