

Replies to Reviewer Comments (RC1)

General Comment: The manuscript entitled "HomogWS-se: A century-long homogenized dataset of near-surface wind speed observations since 1925 rescued in Sweden" submitted to ESSD created a century-long homogenized near-surface wind speed over Sweden. Generally, the manuscript is logical clarity, and the work is very meaningful for near-surface wind speed studies. I clearly recommend publication after some minor revisions.

Response: Thank you for high recommendation of our manuscript. Based on your constructive comments, we have made the corresponding revisions in a new version of the manuscript. Below are our point-by-point responses to your comments.

Specific Comments:

1) Comment: L45: remove "our".

Response: Corrected as suggested.

2) Comment: In Figure 4, I see a nice work in the homogenization of near surface wind speed, while in Figure 4b there is a distinct peak around 1990, were there extreme weather in this year?

Response: Yes, right. The peak is also reproduced by the CERA-20C reanalysis (Fig. 4b).

3) Comment: In Section 3.3, the authors show the results of raw and homogenized WS anomaly series averaged at the 13 stations, and also compared the stalling and recovery trends of different datasets. From Figure 5, I notice that there is a relatively serious lack of data in some stations since 1995, so the averaged weights in different periods is also different, the authors should add some discussions for this issue.

Response: This comment is valuable for climate change analysis, so we examined possible impact of short data duration by comparing the average series between all stations and those stations without short durations of data. We found a weak impact on the trends on longer than decadal timescale (Fig. R1), which does not change the results in the main text. This information has been added in Section 3.3: [Noted that the average of the 9 stations excluding Väderöbod, Torslanda, Visby and Kalmar stations due to short data availability also yields similar results as shown below.](#)

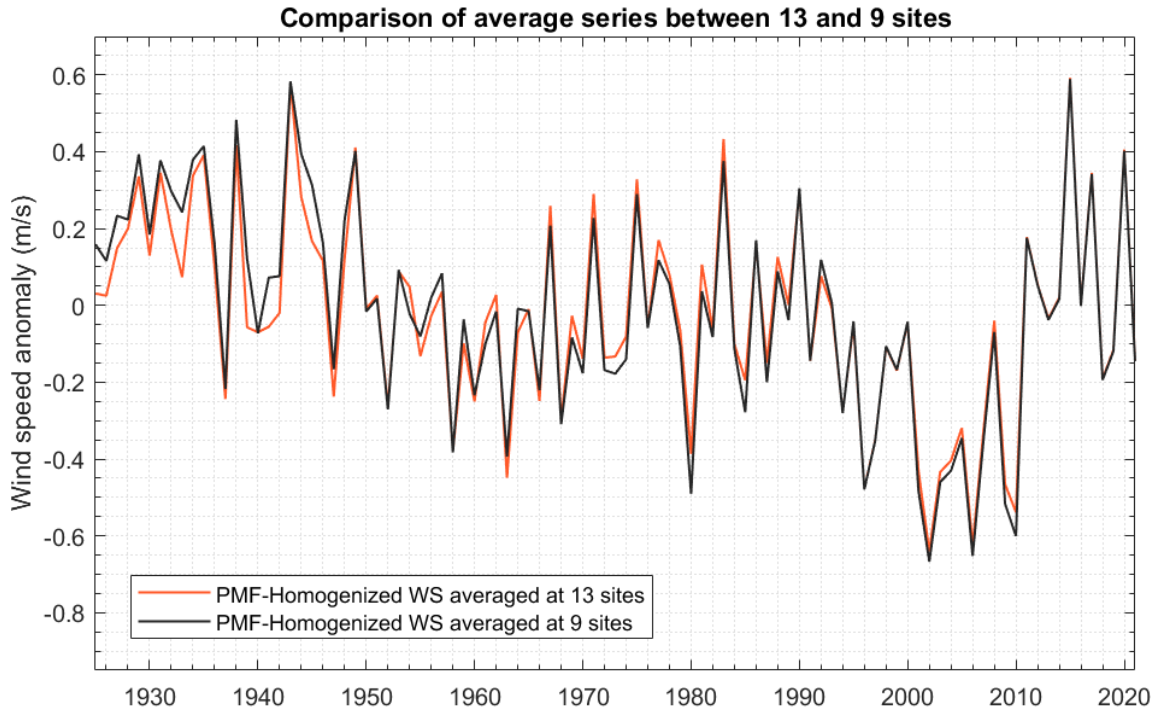


Fig. R1 Comparison of average wind speed anomaly series between two groups with the 13 and 9 stations shown in Figure 5. The four stations, i.e., Väderöbod, Torslanda, Visby and Kalmar, were excluded in the second group due to short data availability.

4) Comment: In Figure 6, the authors could also add the results of geowind, which could help the readers recognize the wind speed changes under the influence of internal variability.

Response: As suggested, we have added the geowind series in the new Figure 6 to show the signal of internal climate variability, along with the NAO index. An explanation has been added in Section 5 to help explain the role of internal climate variability: *Geowind series mainly reflects the signal of internal climate variability and their average at these 13 stations presents basically consistent decadal variations with the NAO index (Fig. 6), implying that wind speed of these stations may be mainly affected by NAO on the decadal timescale.*