

Interactive comment on “Wind-induced seismic noise at the Princess Elisabeth Antarctica Station” by Baptiste Frankinet et al.

Baptiste Frankinet et al.

baptiste.frankinet@oma.be

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Hello,

Thank you very much for your review.

We corrected our manuscript according to your yellow and purples comments in your review.

1. I also modified lines 87 and 88 by adding 2 references that talk about the relationship between the wind energy and ground motion;

"Lepore, S., Markowicz, K. & Grad, M.: Impact of wind on ambient noise recorded by seismic array in northern Poland, Geophysical Journal International, Volume 205,

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and

"Johnson, C. W., Meng, H., Vernon, F., & Ben-Zion, Y.: Characteristics of Ground Motion Generated by Wind Interaction With Trees, Structures, and Other Surface Obstacles. *Journal of Geophysical Research: Solid Earth*, 2018JB017151, <https://doi.org/10.1029/2018JB017151>, 2019."

2. I rewrote: "From the stations in the network, ANT1, ANT3, and ANT5 are the closest to the more seismogenic zones: the collision between the glaciers and the mountains and the zone of channelized glaciers with greater ice flow speed"

by using bullet points to make it clearer.

From the stations in the network, ANT1, ANT3, and ANT5 are the closest to the more seismogenic zones: 1) The collision zone between the glaciers and the mountains. 2) The channelized glaciers represented by greater ice flow speed (Figure 1).

3. I modified the appendix to make it simpler to understand.

"To calculate the PSD parameters used in our models, we used PSDs for every hour-segment of the entire year. As parameters, a 3600 s time window length was used for the PSD computation, which shows that long time seismic series is required to compute significant PSD plots and also correspond to the wind data of the AWS station we compared it to. We did not overlap the time series to have exact PSDs estimates for each hour. The PSD is also averaged over 1/40 of an octave at each central frequency/period. We limited our computations to 50 Hz which is known as the Nyquist frequency of the seismometers used. Those parameters are important to identify characteristics buried in the noise such as weak seismic peaks and differentiate each PSD in more details."

Thank you in advance,

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Baptiste Frankinet.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2020-267>, 2020.

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