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

Anonymous Referee #2

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I read the paper "Wind-induced seismic noise at the Princess Elisabeth Antarctica Station" with great interest. The authors quantified the relationship between wind energy and seismic ground motions, developing a model of the wind-induced seismic noise associated with icequakes.

My general impression is that the article is rather well written: only a specific part of the Discussion and the Appendix needs to be rephrased. As highlighted by the authors, the study of icequakes provides insights into the different processes linked to ice dynamics. The quantitative analysis of icequakes using ambient noise data processing techniques represents an important application of the studies concerning noise wavefield. Then, in my opinion the paper can be published; however, it needs a minor revision before being accepted.

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Discussion paper

Specific comments – the parts that needs to be rephrased are underlined in the highlighted manuscript. 1) Lines 87 and 88: The sentence “By aggregating seismic data for different wind speeds, we quantify the relationship between wind energy and seismic ground motions” should be supported by more references, e.g. “Lepore et al. (2016), Impact of wind on ambient noise recorded by seismic array in northern Poland, Geophys. J. Int., 205, 1406-1413”; 2) Lines 248 and 249: the sentence “the collision between the glaciers and the mountains and the zone of channelized glaciers with greater ice flow speed” is not clear. Rewrite it; 3) The Appendix is badly written and in some parts it is not clear. Rewrite it.

Technical corrections – in the highlighted manuscript, the parts that should be deleted are crossed out and marked in purple, while the parts that need to be corrected are marked in yellow. Corrections are reported in the manuscript in the shape of pop-up notes. Therefore, here the lines are listed in which the parts needing modifications are present. 1) ABSTRACT, lines 6 and 7; 2) INTRODUCTION: ICEQUAKES, line 23; 3) ICEQUAKES AND SEISMIC NOISE, lines 51, 60, 63, and 83; 4) DATA & METHOD, lines 99, 114, 116, and 118; 5) WIND INDUCED NOISE MODEL FOR ELIS, lines 139, 140, 149, and 161; 6) DISCUSSION, lines 228, 231, 246, 247 and 248; 7) CONCLUSIONS, line 269.

Please also note the supplement to this comment:
https://tc.copernicus.org/preprints/tc-2020-267/tc-2020-267-RC2-supplement.pdf

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