

Geosci. Instrum. Method. Data Syst. Discuss., referee comment RC3
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Comment on gi-2022-4

Anonymous Referee #3

Referee comment on "Towards a self-sufficient mobile broadband seismological recording system for year-round operation in Antarctica" by Alfons Eckstaller et al., Geosci. Instrum. Method. Data Syst. Discuss., <https://doi.org/10.5194/gi-2022-4-RC3>, 2022

This work highlights an effort to develop robust seismic stations for Antarctica. As noted here and in previous work, operating seismic stations (or any other autonomous geophysical station) is challenging due to the environmental conditions, in particular the cold and dark. While all sharing of technological advancements are welcome, I feel that in this case, the authors have provided too few details to make the manuscript useful to the audience. I would encourage the authors to provide more information so that other researcher can more easily replicate their design. Below I have a few detailed comments.

Detailed Comments:

Line 58: Perhaps a bit picky, while -20 C to -40 C is certainly cold, I'm not sure it is "extreme" since a Nanometrics trillium posthole 120 can operate to -50 C.

Line 75: Mention that Neumeyer Station is on an ice shelf (I had to look this up)

Line 93: Is it better to use the term Peli (or Pelican) case? A websearch for "Eurocase" doesn't led to the product, I only got to the product page by search the model number included in table 1.

Line 93: I notice on the spec sheet for EU080060-5010 that a minimum temperature is -30 C, have the authors had experiences with this product at colder temperatures?

Line 110: More details on the XEOS XI-202 on the SeiDL Controller are needed? What

exactly operations can they perform do? How much power do they consume?

Line 116/(table 1). What are the characteristics of the GPL31XT batteries that led the authors to choose them? What differentness them from other AGM batteries?

Line 123: Quantify high wind. I have seen many "mechanically robust" pieces of equipment blown apart by wind.

Line 124: I think the authors mean "Pladur Panel Alveo" when they say "Alveo". When I do a web search for "Alveo" this is the only company that appears to make panels. More details on the exact nature of the panels would be nice as well.

Section 3.1.1 and 3.2- I think more details are needed (wiring diagrams?) for these sections to be helpful to the reader or an engineer.

Section 4.1.1: A reader unfamiliar with Antarctic seismology may think this has not been successfully implemented when in fact the use of Li batteries have been the power stations for numerous experiments support the PASSCAL instrument facility (this is briefly mentioned in section 4.4). Thus, I think a reference to Hansen et al., 2015 (where the use of Li Batteries is explicitly stated) is needed in this section.

Section 4.1.2: More details are needed. I have talked to many people whom have had NO success with wind generators in Antarctica for various reasons (wind extremes, icing). If the authors are utilizing wind power successfully at VNA2 and VNA3 that is a great advance and I would like to know more! What are the temperature conditions? How much power is produced?

