Review of ms. **Passive seismic experiment 'AniMaLS' in the Polish Sudetes (NE Variscides)** by M. Bociarska et al.

Submitted ms. documents in details recent passive seismic experiment AniMaLS in Polish Sudetes, both the station installation, network running and data collection, as well as data quality check. Though many described features are well known to seismologists operating temporary networks and working with their data, an advantage of the presented ms. consists in the documentation of the AniMaLS netwok. It can serve, among another "technical strategies" as a guide to students or less experienced young scientists in the field.

The ms. is well written in a simple style, though a language improvement worth for considering. I suggest several modifications of the ms. before considering it for publications.

The first general comment concerns the Introduction section. The section is too long and does not relate to main body of the technical description of the array and data. Moreover, a figure with tectonics of the region (including terms used in the text) and its location within Europe (an inset) are missing in this part. Not everybody is familiar with tectonics of the region. Part starting in Line 35 contains a lot of tectonic statements taken from literature, but without a single reference. This is unacceptable. Moreover, the Introduction should mentioned previous studies devoted to the crust (a series of active experiments) or concerning to the mantle lithosphere (passive experiments), incl. anisotropy and LAB, sub-lithospheric upper mantle. This is not the first study of this kind in the region as it is presented here (e.g., Majdanski et al., 2014; Grad et al., 2008; Karousova et al., 2012; Geissler et al., 2012, Plomerova et al., 2012; Vecey et al., 2014; Knapmeyer-Endrun etal., 2013; Kind et al., 2017; Kvapil et al., 2021), regardless of the fact that the main purpose of the ms. lies in the AniMaLS array documentation.

The second general comment relates to the repeating of too many numbers within the text, which are also in Figures, their captions and Tables. The continuous repeating makes the text chaotic and boring. Suppressing repetitions of several kinds will make the text shorter and clearly oriented on the technical aspects of the array.

What is the reason for plotting in Fig. 1 also stations not used in the study and the figure at all? Figure 3 would be more appropriate at the beginning of the ms. According to which criteria some of permanent stations are listed in Table 1 (station used in the study, as seems form further parts in the text) and some not (see Fig. 1). The Table 1 can contain, e.g., the institutions operating/owning the stations instead in the long text.

Not all abbreviations used in the text are introduced.

Line 18: strange formulation, usually data are used to model some feature (structure) .... not data Reformulate please.

Line 39: should be …aims at

Line 67, 415: should be ….. Czech Regional Seismic Network

Line 179 (e.g.): consider to use …. data acquisition system…. insted of …..recorder

Line 200: Cenozoic

Line 211: Sentence reformulation can help. Change order in the sentence, add (Fig.4) into it and delete the following two short sentences. Info in the second one is in the legend of the figure, there is no need to repeat it. Check the ms. for this kind of its improvement. It can be done in many places.

Figures 6 and 7 are examples of regional and teleseismic earthquakes recorded by the network. Most information is repeated three times - in the figures, captions and text. Clean the text (line 230 and further) from numbers, keep them in figure headings/legends. Location of time scale at the top of figures with an arbitrary origin is strange.

Line 245: adding location of the two local earthquakes into the Fig. 3 (even if it becomes Fig.1) would bring new information

Line 250: Do not repeat numbers presented elsewhere……The first event with magnitude 4.4 occurred 2018-07-03, 19:38:47.75 UTC …..

Line 259 or caption of Fig. 10 and many other places in the text: who is using? Instead consider ... with the use of ....

PPSDs shown in Fig. 11 do not support the frequent statements on "high-quality data" from the AniMaLS array. AG10 does not meet the High and Low-noise criteria neither on the Z component. Horizontal components of AR06 are poor. Splitting of the PPSD at UPS (permanent) comes from the winter increase of the micro-seisms. Showing PPSD for all three components of the all temporary stations (in an electronic attachment) would be better than Figure 12 with selected temporary stations and permanent stations, whose PPSD are better. Is the effect of instrument type stronger than that of sediments at a site? It looks like that from Fig. 13. Please, comment on that. (Repetition of colour description in the legend and caption of Fig.13.)

Line 315: cultural effects – anthropogenic effects are meant (not necessarily "cultural")

Line 321: 3-component spectral seismograms

Line 333: Such phenomenon is well known for a long time and described …..

Line 340 and around: too many abbreviations

Line 344: ….. corresponds to a thinning of the sedimentary layer, or,....

Line 356: repeats ...

Line 364: change order in the sentence

Line 405 and Figure 15: change label of GKP to be readable; put all labels ABOVE the frame; KEEP standard notation, i.e., that sensor mis-orientations greater than 5° prevents naming the horizontal components as N and E!!!, but the component must be denoted as Z, 1 (for N) and 2 (for E). This criterion should be accepted and followed (vs. Lines 412 and 430). Wrong orientation of the GKP

station has been identified during processing data from the PASSEQ experiment and published in Vecsey et al. (2014)! However, presenting this information in the ms. is not correct, or, written in confusing way. What do you mean under the direct measurements in the field? In this form I understand that you mean measurements by gyrocompass. However, the GKP mis-orientation in Vecsey et al. (2014) was determined by software methods, as described there and mentioned in the Figure 15 captions (add ref Vecsey et al., 2014 for GKP deviation) but wrongly in the rightmost column of Table 2. I suggest:

Table 2. **Misorientation angles for all stations by different methods.**

Station Code	Fontaine (2009)	BNG method	DL method	other / gyrocompass
AG01				
GKP	34. 36+/−	36. 80+/− □	33. 92+/− □	39+/− (Wilde−Piorko etal, 2017) 45+/− (Wilde−Piorko etal, 2017) 41 (Vecsey et al., 2014)

Followed by as you have it
CHVC 11. 07 □} 4. 64 8. 61 □} 5. 50 6. 50 □} 4. 82 0. 70
DPC -0.52 □} 2.72 1.60 □} 2.66 -2.27 □} 3.00 0.00
KRLC -1.72 □} 3.16 -1.22 □} 2.38 -1.33 □} 4.33 0.00
MORC -2.57 □} 3.09 -1.91 □} 3.21 -0.52 □} 3.10 --
OKC -8.68 □} 3.09 -11.03 □} 3.16 -5.99 □} 3.62 -7.00
OSTC 21.73 □} 4.33 28.26 □} 6.82 21.84 □} 3.59 23.00
UPC -0.05 □} 3.55 4.13 □} 4.35 -0.53 □} 3.06 0.00

Line 416: Modify the sentence ……from direct, high accuracy measurements in field by gyrocompass (Vecsey L., Institute of Geophysics of Czech Academy of Sciences, personal communication, 2020).

Line 453: correct the sentence and add references for active experiments.

Line 455: In the past, the study area was covered by a single Polish seismic station KSP only …… This is incorrect statement. See, e.g, Fig. 2 in Vecsey et al., 2014 for PASSEQ experiment and other experiments covering the Sudetes (BOHEMA II) and related papers.

Line 465: Data availability: Data from the AniMaLS experiment are stored at the IG PAS (https://dataportal.igf.edu.pl/dataset/animals), currently with restricted access.

Do you plane to store the data in an EIDA node and when the data will be opened for public access?