Based on reviews I have received, your manuscript may be suitable for publication after some revisions. We have received two reviews for this manuscript, both of which recognize that this may be a useful data-based report contribution for the seismic community. They also provide helpful details on where clarity in the manuscript can be improved, for example with regards to data processing details, and figure formatting. I agree with the reviewers' assessments and their requests for revisions to improve these aspects of manuscript; please read both reviews carefully, and address all comments and concerns.

We sincerely thank for reviewing our manuscript and your positive feedback. We have incorporated the reviewers' comments, and believe that the revisions we have made, including the correcting of inapproprate description and figure modifications, have improved our manuscript.

Reviewer A:

In this manuscript, the authors report on an ocean-bottom seismic deployment around Jøtul Hydrothermal Vent Field, Knipovich Ridge, which was designed to investigate the ultraslow spreading ridges and associated hydrothermal activities in this area. They present a broad range of seismic observations from both passive- and active-source data, including ambient noise, local, regional and teleseismic events, as well as air-gun shots. They also perform clock-drift and horizontal-component orientation corrections for the OBSs and evaluate the ambient seismic noise levels. Overall, this is a valuable OBS experiment, and the manuscript is well organized and written. I recommend publication in Seismica after minor revision. My line-by-line comments are provided below.

Thanks for your review, and providing us constructive feedback. In the revised manucript, we modifed some figures and corrected the inapproprate description. Moreover, we added a figure of an average CCF in the supplement file for a better visualization of the CCFs.

Figure 1: An inset map showing the location of the study area in a broader geographical context like on a global or regional scale would help.

We have added a inset map of global scale to the revised Figure 1.

Line 151: "Cascadia initiative" --> Cascadia Initiative

We have replaced it in Line 158.

Line 168: "Obspy" --> "ObsPy", also correct other occurrences throughout the main text.

We have revised this in Lines175, 250, and 363.

Line 177: "For obtaining high-quality CCFs": What metric was used to quantify the quality of the CCFs and determine whether a CCF was considered "high-quality"?

We're sincerely sorry for the inapproprate description. We wanted to express that the use of a specific filter might highlight the CCFs more clearly, which then can show clear time shift of instrument. Therefore, the "quality" what we describe here relates to the visualization of time shift. To avoid misunderstanding, we revised our description to "For clearer CCFs, " in Line 184, ,and "the visualization of the CCFs" in Line 189.

Figure 4 caption: "The crosses are the calculated results of all used teleseismic events with different period filters": Please provide more details, particularly regarding "different period filters".

We describe these details now in the caption with “The crosses are the calculated results of all used teleseismic events with different period filters (at 40 mHz, 35 mHz, 30 mHz, 25 mHz, 20 mHz, 15 mHz, and 10 mHz with a bandwidth of 10 mHz, respectively), plotted with random colour.”.

Section 4.1: I assume that this section refers to the surface-wave signals retrieved from the CCFs. However, I cannot clearly see the surface-wave signals in Figure 3. Please consider marking them explicitly or using a different plotting style to make them more visible. In addition, there appears to be strong zero-lag noise after the clock-drift correction.

Actually, the CCFs close to 0 seconds lag time are very complex. It is therefore hard to identify surface-waves. We added an average CCF after time correction as supplementary Figure S8 to better illustrate the complex character of the CCF. We think that the strong zero-lag noise is affected by the disturbances from daily changing ambient noise. We rearranged the paragraph to avoid the impression that surface waves could be easily identified from the CCFs, in Line 239-246.

Section 4.2: How do you interpret the offset between the PPSD distributions of your OBS records and global noise models (NHNM and NLNM), particularly in terms of the period range over which the main spectral features occur? One point that may be worth considering is that the global models were constructed using mostly island-based stations within the GSN (See Section 1.1.1 of the book “Seismic Ambient Noise” by Nakata et al. (2019))

We only described the offset before in Line 252 and didn’t explain the observation. Actually, the difference in the peak period of the double-frequency microseisms compared with global models is caused by the prevalent ocean waves, as analyzed in e.g. Bromirski et al. (2005) or Schlindwein et al. (2025). We revised the relevant content to “The offset of the locally generated double-frequency microseismic maximum peak (e.g., Bromirski et al., 2005; Schlindwein et al., 2025) may be influenced by the shorter period of ocean waves in Norwegian-Greenland Sea compared to global models. ” in Line 259-261.

Bromirski, P. D., F. K. Duennebier, and R. A. Stephen (2005), Mid-ocean microseisms, Geochem. Geophys. Geosyst., 6, Q04009, doi:10.1029/2004GC000768.

Schlindwein, V., Li, S., Kirk, H., & Schmidt-Aursch, M. C. (2025). Seismic soundscape of the Arctic Ocean: seasonal effects of sea ice and swell on deep-sea ocean bottom seismometer records. Geophysical Journal International, 242(1). https://doi.org/10.1093/gji/ggaf143

Line 280: “We also observe the so-called noise notch at 10-30 s during”: Explicitly marking the noise notch in Figure 6 would be helpful.

We added red lines marking the noise notch in Figure 6.

Reviewer C:

Review comments to Quan et al.

This manuscript shows the basic data processing and the data quality of the OBSs deployed around the Jøtul thermal vent field in the Knipovich Ridge. The data processing includes the corrections of clock deviations and horizontal orientations of the OBSs. The data quality check contains spectral estimations and event detections. It seems that this manuscript is useful for readers who will use this dataset in the future.

Thanks for your positive feedback to our report. We believe that, thanks to your valuable advice, the manuscript has significantly improved - particularly the figures, which are now easier for the reader to interpret and analyze.

L102: “using two roughly circular” The meaning of this part is unclear. Do the authors mean “using two roughly circular-shaped observation networks”?

It’s right, “circular” refers to the shape of the networks here. We changed the sentence to “using two roughly circular-shaped observation networks” in Line102.

L103, 106: The meaning of “dimension” may be unclear, and radius or other words may be suitable.

We replaced it with ‘diameter’ in Line 103 and 106

L116–122: I do not understand this part well. Do the authors mean that the locations of the OBSs are not determined by acoustic positioning system? If so, please describe its reason. Otherwise, it is necessary to explain how the locations of the OBSs in Table 1 are determined.

Actually, we can’t determine the real seafloor positions of the OBSs as we didn’t use an acoustic positioning system. We added an explanation in Line 120-126, why we couldn’t use the acoustic positioning.

L151: “Following the definition of the Cascadia initiative (Sumy et al., 2015)” It is helpful for readers that the authors explain about this method in the text, and reasons why this definition is used.

We added the content of “Following the definition of the Cascadia Initiative (Sumy et al., 2015) , the ratio of actual volume of recording data to that of data collected if all instruments were normally operating, the data recovery is 83.33% for the seismometer channels, and 85.22% for the hydrophone.”, in Line 158-159.

Figure 6, S10–S13: The label font sizes in the vertical axis should be enlarged.

Thanks for the advice, we enlarged the font size of the vertical axis. The font size of axes, labels, and the small power of the numbers on the vertical axis were enlarged.

Figure 7: Please define the unit of the vertical axis, and the magnification for the vertical axis should be enlarged. The station codes at the right should also be enlarged, and the solid line in the waveforms in panel c should be broadened.

The unit of the vertical axis is “counts”, and we also enlarged the font size of the figure.

Figure S3: It is very hard to distinguish green and pink dots, specify bule dotted line, blue line, and black line.

We have modified it.