Hydroacoustic observations of volcanic degassing

Caudron et al., 2026

Answers to the reviews

First revision

Dear Editor,

We first would like to thank the editor and the reviewer for their very constructive review. We have taken most points into account as you will see below. It took us a bit of time to revise everything as it is teaching season right now. We hope we have addressed everything properly.

Best regards,

Corentin Caudron

Editor

In the manuscript, clearer descriptions and adding scales and dimensions on the figures would be useful. I would also suggest adding some scale bars on the pictures (figures 1 and 6). A minor point that could be relevant later, the fontsize on the figures varie a lot and should be homogenized a little. For example the fontsize of figure 8 should be increased.

→ *We have followed your recommendations and have homogenized figures, fontsizes. We decided not to add the scale bars for the photos (figures 1 and 2) as the closer bubbles appear very large and further away very small and it would only confuse the reader.*

If you deem it appropriate, please check that the revised version of your manuscript recognises the work of the reviewers in the Acknowledgements section.

→ *Yes of course. We have highlighted the main changes in the tracked version.*

Reviewer A

Dear editor and authors,

The data report describes an interesting hydroacoustic dataset acquired in five different lake and marine volcanic settings. Most hydroacoustic data currently available near active volcanoes are acquired at low sample rates, mainly by hydrophone moored in the SOFAR channel or Ocean Bottom Hydrophones. This dataset proposes very high sampling rates (audio band) in areas with known active volcanic degazing and bubbling and different state of volcanic unrest. The data spans from a few hours to a couple of weeks depending on the site. As the author concludes, they are likely to foster new developments and innovative methods in the field of underwater active volcano monitoring.

The descriptions of the data files however are inconsistent with the data samples provided in the Zenodo repositories, which could prevent the reader to correctly assess the quality and interest of the data :
- section 3 describes data recorded in .wav format and data availability section points to a python code to correct the instrument response from data files in .wav format;

→ *indeed we record as .wav but have decided to convert the files to .mseed to facilitate their use by the seismological community.*

- the data files available for download and preview in the Zenodo repositories are in miniseed formats and the instrument response correction code can not be used.

→ *this has been fixed and the code for the instrument response correction is available on a github repository.*

This inconsistency should be corrected and it would probably be better for long-term visibility of the dataset to provide the instrument response informations or correction code in the same Zenodo repositories a the data. This will allow to freeze the code version to one that has been validated by the authors.

→ *thanks; we have created a github to facilitate its access to the community.*

The figures to display data examples are missing amplitude scale to compare the different sites settings. Figure 4, 5 and 7 are missing amplitude units (likely in uncorrected raw data). There is no color scale on figure 8. Figure 9 is missing units on the spectrogram amplitude scale (likely corrected data in Pa).

→ *From Figures 5 to 10, we have used the same spectrograms in correct units and adjusted the captions accordingly. The figures will hopefully better guide the reader*

→ *We have decided to make the spectrograms more uniform but are changing the amplitude thresholds for the colorbars to make them individually well visible*

It would help the reader if the signals highlighted in each volcano site subsection of section 4 were also spotted on each spectrogram (figures 4, 5, 7, 8 and 9).

→ *for clarity we have created new spectrograms*

The caption of Figure 9 is inconsistent with the figure itself. The caption mention four subplots, while only two are present on the figure (likely only the hydrophone). It would be better if Figure 9 colorscale was the same as the other spectrograms.

→ *This figure has been replaced with a spectrogram to improve consistency*

Line 103 : it could be interesting to describe where to find OVSICORI complementary data (data center, network code and DOI).

→ *unfortunately, this is not our call and OVSICORI needs to be contacted directly. Note that they have experienced issues with data access in the past and they are therefore more careful now.*

Line 114 : it could also be interesting to describe where to find KivuSNet data (data center, network code and DOI).

→ *information provided now*

Line 138 : Zenodo link for Poas data samples is truncated. I was unable to access and look at these dataset.

→ *Could the reviewer/editor try again? I have had no issue accessing them*

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Answers to the reviews

Second revision

Dear Editor, dear reviewer,

Thanks again for your constructive comments which have been taken into account (see below).

All the very best,

Corentin

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There are still some minor inconsistencies that should be easy to correct.

* Figure 9 legend is the same as figure 6 legend, advertising a spectrogram from Panarea. But the title of the figure says POAS and figure 9 is referenced in the text as an example of POAS site recording.

→ corrected

* In "Data and code availability", it should be clarified that data are in miniseed on Zenodo and the rest available upon request in .wav format (unless the author can provide all the dataset in miniseed, which should be said also in this case ?).

→ done

* In the github repository for the response correction codes, could you add a README file to tell the reader that Instr_corr_obspy.ipynb notebook is to correct data in miniseed format and Instrument_correction.ipynb notebook to correct the data in .wav format ?

→ done

Regarding POAS Zenodo link, I double-checked. On the two PDF readers I tried on Linux, it appeared truncated on the display (see attached screenshot Poas_zenodo_link_truncated.png) with the last 2 digits missing. On one of the readers, I have been able to retrieve those last 2 digits by copy/pasting the whole phrase. This issue should be checked carefully during final edition and proof reading.

→ done