We would like to thank the reviewers for their thoughtful and extremely constructive comments, which have significantly helped us to improve the clarity and quality of our manuscript. Below, we provide detailed responses to each point raised. For ease of reference, the reviewers' comments are reproduced in regular text, followed by our responses in **bold**. Where appropriate, we have indicated specific changes made to the manuscript.

In the highlighted version of the manuscript, these are marked in green. Yellow marks indicate new or rewritten text. Figures on a yellow background were modified or created new for the present version of the manuscript.

Summary of changes:
Figures 4, 7, and 17 were altered according to suggestion from Reviewer1.
Figure 10 was exchanges with Figure S1, according to suggestion from Reviewer1.
Figures 16 through 18 were combined into a single figure, according to suggestion from Reviewer2.
Figure 11 replaced a previous version, to improve clarity.
Figure S18 was replaced by a higher resolution spectrogram.

Section 1.2.1 was merged with section 2.1
Better explanation of crosstalk and saturation events
Merged Sections 2.2.2 and 2.2.4
Merged Section 2.2.3 with Section 2.3

Reviewer #1
This a revised version of a Data-based Report for Seismica describing a DAS data set from the GeoLab fiber in Madeira. It is markedly improved from the first version, and the authors have responded thoughtfully to my comments. In some places I think it is still longer than necessary, but a reader interested in working with the data or understanding the range of signals recorded by submarine DAS should be able to navigate the report to find the portions of interest and others may find the detailed descriptions of DAS and baleen whales calls of value. I will be excited to see this work published.
We thank the reviewer for the constructive criticism. It has significantly improved the manuscript in terms of scientific correctness and the flow between the different subjects.

My detailed comments on the revised manuscript are as follows:

16-20. Sentence is a bit of a mouthful. Would be better to swap the two halves. “This report …”
Agreed. Rewritten to improve clarity.

1. Pressure does affect the refractive index, but the effect is I believe sufficiently small that DAS has no direct sensitivity to pressure.So perhaps move it from here and clarify in 68-70 that indirect sensitivity to dynamic pressure waves.
We have kept the mention of pressure in L52, but clarified in L68-70 how pressure affects the fibre when cladding and coating are also involved. References supporting this were also added.

85 Delete “on the data”
Agreed.

1. Move eq 1 up to follow first sentence of paragraph.
Agreed.

1. “optical fiber” would be better.
Agreed.

103-105. This sentence needs a citation for “sensitivity to different physical phenomena” unless it is temperature and coupling in which case these need to be more clearly identified being these different physical phenomena.
Agreed. Added the necessary citation.

124 “dependency of the incidence”
Rewritten the phrase to improve clarity.

137-139. Isn’t this the same point as 117-120
Agreed. Merged with lines 117,120.

153-167. Aside from the abstract, the 10.2 m gauge length has not been introduced, só 1.2.1 should be merged into 2.1 to justify the choice of gauge length when that is presented.
Agreed. Moved to section 2.1.

186-190. It would be good to clarify here for the non-expert like me, what the equation is, how it is related to the units of data in the data set and how the user can convert that to strain/strain rate. Specifically, Df looks to be to a change in phase not a “phase rate” since it is linked to strain and not strain rate on the right-hand side. Somebody using the data might also want to know the refractive index and material parameter and whether they are incorporated into the data.
We’ve updated the equation to reflect phase rate. We’ve also added the working wavelength of the interrogator, and the refractive index used.

195-197. 11380 minus 11294 from above does not equal 90
Agreed. Corrected to 86.

1. It would be better to say “no further time corrections are available” because as written it could be interpreted as indicating that the authors have better time corrections but are not disclosing them, which I think would be unacceptable.
Agreed. Rewritten according to suggestion.

216 and Fig 4. It would be really helpful to add horizontal lines to the 3 panels of Figure 4 at either low or high tide. Based on my best efforts with a ruler, there seem to be intervals at both 9 km and 13 km, but particularly at 9 km, where peak noise is close to both low and high tide.
We’ve added lines propagating the low tide mark to all panels. We should expect higher current noise not exactly at tide reversal (slack tide), but when tidal currents are stronger, which is what we observe.

229-30 “primary microseisms” should be “secondary microseisms”. Swells are primary microseisms
Agreed.

1. Second mention of 116 h saturation even on Fig. 21. The final sentence “With f-k filtering …” is orphaned with no obvious relationship to what comes before or where this phenomenon can be seen. Delete or expand?

This phrase shouldn't have been here. It made it to the manuscript as an unintended copy-paste. It has been removed.

282-295. I think this would be easier to follow if it was presented along with the earthquake rather than a few sections earlier.
Agreed. We moved the figure with the earthquake here.

1. So what is being done in the region with a blue box. If the noise overpowers the signal, then the SNR should be negative on the dB scale.
Since we are not actually comparing signal to noise, but rather windows where we expect signal with windows where we don't expect it, the SNR will probably not be negative if both windows just contain noise at roughly the same amplitude.
For earthquakes, the region in the blue cannot easily be characterized for coupling, as the shoaling waves overpower most other signals.

290 Should "typical range" be "typical depth"?
Agreed.

300 "but the decay occurs faster than on unaffected channels" – This is rather unclear? There is no signal to decay if a channel is "unaffected" so I think from Fig 7, it means that ringing decays faster than the earthquake coda, which somewhat contradicts the statement that it is a "prolonged ringing effect"
We agree with the reviewer. If there is no signal, there is nothing to decay. We compare the decay of the signal with the earthquake coda on the affected channels. We have rewritten the paragraph to improve clarity.

302-304. It is not clear how aliasing can produce a signal that is higher amplitude than background which it certainly is at the onset. I think the statement "We speculate …" should either be clarified or removed.
Agreed. We still have no mechanism that explains this. ASN indicates that end-of-fibre reflections should not affect more than a few gauge lengths. We have removed the speculative phrase, but kept the observation about the geometric progression of the distances between the events.

313-316. I suggest swapping Figures 8 and S1 since the latter shows the earthquake better on the DAS and allows comparison with the seismic station.
Agreed. We've also updated the text to focus on the record section.

1. Cite Figure 1 for station PMPST.
Agreed.

320-324. This is confusing since the interpretation as common noise in the first sentence seems to be contradicted by the statement that the banding patters are different between stations.
We've rewritten the section and merged it with "Ringing Effects".

333-337. It would be better if the terrestrial stations were introduced before section 2.2.3 which compares the DAS data to station PMPST for a teleseismic event.
We've moved the "Broadband response" section into the "Seismicity section"

342-343. Perhaps with labels, can the authors identify the 3 branches of the T-phase. To my eyes and looking at the figure from the side at a low angle, the T-phase looks continuous but with

variable amplitudes. Is the identification of different conversion points based on picking and modeling onset or peak amplitude times and if not, what is it based on?
We've added an inset with an interpretation of the different phases. The precise identification of the conversion points is still an ongoing effort, and not part of the present manuscript. We do know that it has to be on the western slope of the Desertas Islands.

349-352. I am not sure I fully understand this. The phase rate is the rate of change of phase so averaging this over 30-minutes would recover the very low frequency component but why not just apply a low pass filter? Is the logic for normalizing by the standard deviation, to account for the different sensitivity (coupling) of channels? A bit more explanation might be good.
A 30-min average is more aggressive flattening out spikes than a low-pass filter. We based this analysis on methodology proposed by Ide et al. (2021). Nevertheless, we agree that a low-pass filter would provide similar results. The normalization step is a way to balance the sensitivity of the different channels, but also to balance noisy and calm periods.
We've clarified the text to reflect this.
The figure has also been updated, with an additional processing step and a new colour scheme to make the features stand out.

353-354. I will take the authors word for it, but the semi diurnal periods is far "obvious" from the figure. I am not sure how to improve the presentation.
We have replaced a figure with one with more contrast. We have also added a new figure to the supplement with enhanced contrast.

361, 364. Instead of "below" and "above" for depths, please use "less than" and "greater than" here and throughout to avoid ambiguity.
Agreed. Corrected where appropriate.

361-364. I am not what to look at to see these features. How about adding labels to the figure?
We added labels under the figure identifying the different domains.

1. What is a "first filter"?
The paragraph was a bit hodgepodge. We've rewritten it for clarity.

426-475. This is a nice summary of low frequency baleen whale calls expected in the Atlantic but it seems rather long-winded for the 7 lines describing the analysis and identification of two types of whale calls in the data.
We opted for a more in-depth explanation with abundant references for further exploration for researchers in areas other than geophysics. Also, since we are still collecting data, having an overview of what is possible to do will also help foster collaborations between ARDITI and other institutions.

Figure 17 & S16-S17. I think the identification of fin whale should be tentative since the calls look very weak in the spectrogram and it is difficult to explain why they are observed over such a small cable segment.
We are confident that these calls are fin whales.

Arguably, the features label with blue arrows could also be a fin whale (the highest amplitude features in Figure S17 look to be about a second long at the right frequency although it is hard to tell at this scale if they are downswept). I am not aware of any blue whale calls that look like this, since the spectrogram does not show calls lasting for several seconds as would be expected for blue whales.

We've revised the identification to "possible fin whale or, less likely, blue whale". We have also added why the identification is challenging.

507-509. If aircraft have not been identified in the data, why is this text needed?
Agreed. Removed.

Figure 19. I am confused this figure and in particular which signal is identified as a ship and which is identified as a humpback. Perhaps labels could be added.
We've added a green box highlighting the ship noise.

Every figure with a spectrogram – please give the parameters used to create the spectrogram (window length and overlap %) since this greatly impacts how they look. I was particularly interested in these for Figure S16 and S17, but other readers will likely be interest in other spectrograms.
We've added the window size and overlap for all spectrograms.

Figure S17. There is no need to filter data before creating a spectrogram. The 25 Hz upper limit appears to have possibly truncated some of the signals.
The data section was quite noisy at lower frequencies, overpowering the signal that we wanted to draw attention to. We mostly wanted to highlight the inter-note interval instead of providing a more faithful spectrogram.

Reviewer #2
This manuscript presents an offshore DAS deployment and a set of observations. The dataset has clear potential and will likely be of interest to the geophysical and oceanographic communities. However, several aspects of the presentation and interpretation require clarification or improvement. I also agree with Reviewer #1 that the manuscript remains excessively long, and its organization could still be improved.
We thank the reviewer for the suggestions that helped improve this manuscript, especially on the clarification of the points that might stump readers less familiar with DAS.

Comments:

L189: I am not sure how the optodas is handling the conversion between the dphi and dstrain, since it is using the sweeping frequency instead of a laser pulse. Equation 5 here is not straightforward for me to interpret.
The OptoDAS interrogator converts phase rate into strain rate by simple multiplication of the sensitivity value K. We have updated the equation for strain rate and improved the explanation. Since we are providing the raw phase rate files, the reader can perform other conversions.

Figure 5: Could the author clarify whether this ASD is for strain or strain rate? I thought the strain rate would have a relatively flat response at lower frequencies, while strain spectra exhibit a 1/f response.
The calculation was does using strain rate data. We've added this information to the caption.

The theoretical saturation value for pulse-based interrogators is well understood (Zhai et al., 2025, JGR). What is the theoretical saturation value for the sweeping-frequency optodas interrogator?
We have updated the text to highlight the difference between single pulse and sweep DAS. For the OptoDAS, the maximum phase difference is ± 8π.

L262: ‘When saturation occurs…’, Could the authors explain the reason? As for pulse-based interrogators, the saturation will not affect later channels. Is the author using the simpleDAS to load the data? Please note that the spatial unwrapping may be accidentally triggered to cause artificial stripes.
We have improved the explanation of the manuscript. For sweeping-frequency systems, the correct term is crosstalk between (mostly) the sweep length and the phase unwrapping algorithm.
We did use simpledas to load the data, as a convenient wrapper for the hdf5 reader. However, the same parameters were used for all the data shown in this manuscript. We do not expect the spatial unwrapping to have been triggered for some parts of the data.

L292: How is the 90dB determined for the indicator of saturation?
In this case, 90dB is an arbitrary number, just below the outliers. We have corrected the text to clarify this.

Figure 8. I find this plot confusing. I cannot tell any of the phases from the plot. They have similar amplitudes to noise. Figure S1 (with a longer time before the P arrival) could be a better presentation.
We have exchanged the figures. The limited number of stacked traces and the relatively low SNR from DAS don’t make it easy to identify arrivals on single traces.

Line 346-347: Why is analyzing the temperature more challenging than analyzing the impulsive events? I thought the temperature change, especially at shallower depths, would be one of the most prominent features.
Optical fibre has a hysteresis to temperature of several seconds. At shallower depths, the temperature signal is over-powered by the shoaling waves.

L419: Are you referring to Fig. 14 instead of Fig. 15?
Yes. Corrected in the text.

Figure 15: How were they determined to be saturated?
You are right, they were not saturated. Only very high amplitude. Corrected in the text.

Figure 17. The figure caption should begin with a clear one-sentence summary (e.g., “Time–distance plot of…”).
Agreed. Corrected in the manuscript.

Can Figures 16-18 be combined into a single figure with multiple panels to improve conciseness and readability?
We’ve combine all three figures into one.