

I want to thank the authors for considering my comments. The revised manuscript has shown significant improvement compared to the original submission. However, I still have a few comments on the method/data and discussions, some of which were brought up in the initial reviews but are not fully addressed in the revision. A clearer explanation of these comments would be critical to ensure the high quality of the results; therefore, another round of revision is required before it can be considered for publication.

1. Data and Method section: I still have concerns about the tomography results, considering the complex waveforms in the short-period bands. This was related to the second comment in my initial review. The authors have addressed part of it, but ignored the part on the complexity of waveforms. At the low-frequency end, 3-7 s and 5-10s, there appear to be multiple phases in the cross-correlation functions (Figures 3a-3b). How are the complex phases handled in the fitting process? While the authors added one supplement figure (Fig. S3) showing the waveform fitting for one particular station pair, I suggest including the results for a few more station pairs, particularly those crossing the volcanic centres, to show the model's general high quality.

R. Thanks for your suggestion. At the low-frequency band, the synthetic waveforms from our model generally fit the EGFs well. The robustness of delay measurements is ensured by evaluating the SNR and the peak cross-correlation coefficient. Please see lines 115-120 in the revised manuscript.

We have added more waveform fitting results from station pairs crossing the WDLC volcano, please see new figure S3 in the revised manuscript.

2. Related to the first point above, I suggest that the authors differentiate the cross-correlation function waveforms for station pairs crossing the volcano from those not in Figure 3. This could illustrate the waveform differences related to volcanic structures. In the waveform fitting process, the authors mentioned that they selected high-quality data using an SNR criterion of 4. Please include the definition of the SNR here.

R. Thanks for your suggestion. We have collected the cross-correlation function waveforms for station pairs crossing the volcano, please see new figure 3 in the revised manuscript.

We have added the definition of the SNR, please see lines 116-118 in the revised manuscript.

3. On the statement of “Rayleigh waves are most sensitive to P-wave velocity at shallow depths”: Do you mean short-period Rayleigh wave here or in general? Is there any reference to back up this statement?

R. Thanks for your suggestion. We have revised this statement, please see lines 174-175 in the revised manuscript.

4. Melt fraction estimation in section 4.2: The authors added the melt fraction using absolute velocity based on comments from reviewer #1. I found the results very interesting, however, no details are given, with everything summarized in a supplementary figure (Fig. S9). I suggest moving this supplementary figure to the main text and adding more information about the computation

processes in the discussion section. The melt fraction is a significant result from this study, and the related calculation behind it needs to be documented clearly in the main text.

R. Thanks for your suggestion. We have added more information about the melt computation processes in the discussion section and moved the supplementary figure to the main text. Please see lines 232-240 and figure 9 in the revised manuscript.