

MDPI Publications

Remote Sensing

Supporting Information for

Infrasound observations of atmospheric disturbances due to a sequence of explosive eruptions at Mt. Shinmoedake, Japan, in March

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Introduction

Additional explanations related to the picture and table below are as follows:

- Original infrasound data for March 9, 2018, 1558 JST, March 11, 2018, 0405 JST, 0746 JST, March 12, 2018, 1245 JST, March 15, 2018, 1413 JST, and March 25, 2018, 0735 JST (Figure S1 to S6);
- A set of noise-PDF plots for stations on Shikoku Island during the period of active eruption (Figure S7-S9) and during inactive eruption (Figure S10-S12);
- A set of noise-PDF plots for infrasound stations KUTo8 (Figure S13) and KUT10 (Figure S14).
- Records of the Mt. Shinmoedake eruptions at 0405 JST on March 11, 2018 (Figure S15); and at 1245 JST on March 12, 2018 (Figure S16) from the stations on Shikoku Island.

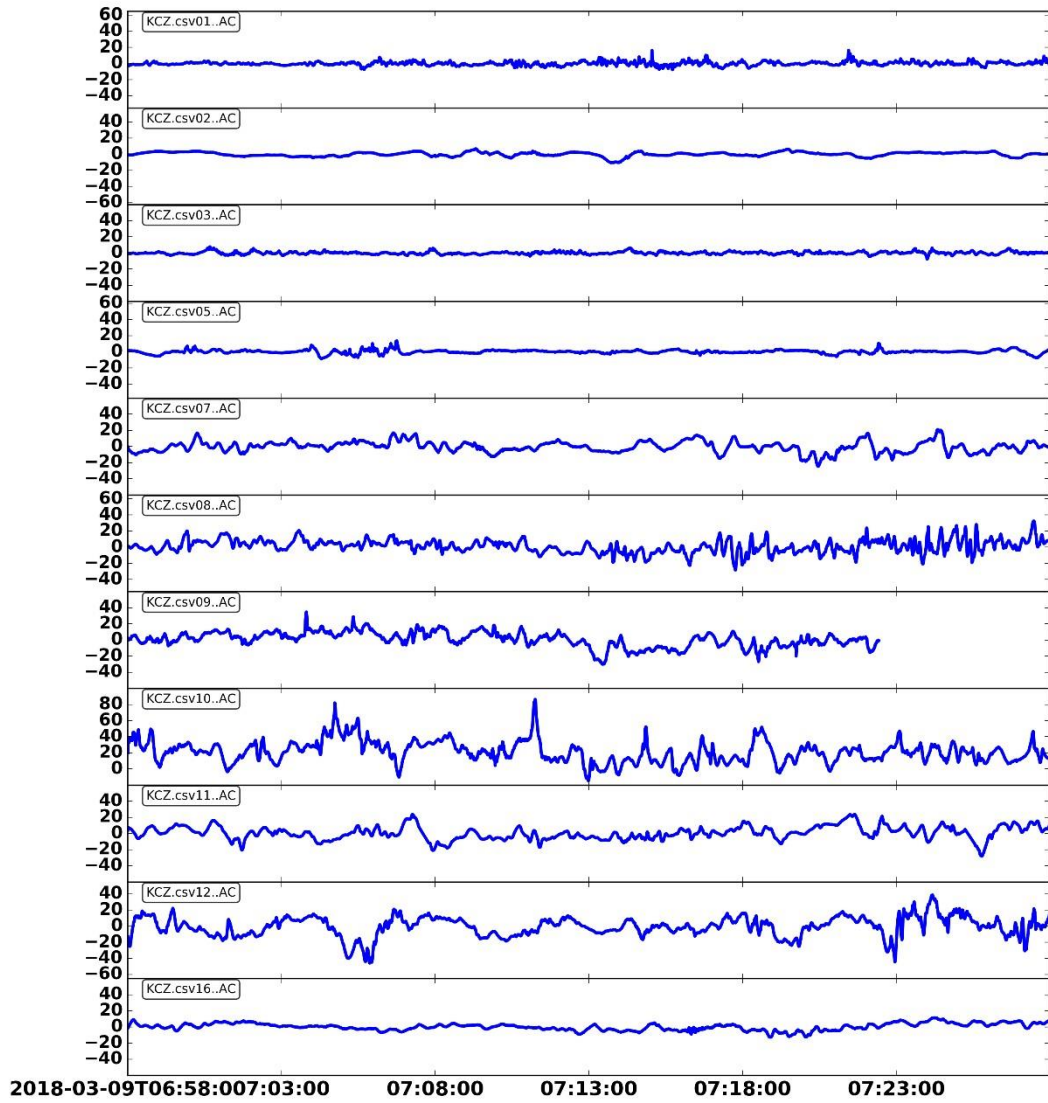


Figure S1. Infrasonic pressure data for March 9, 2018, 1558 JST showing the arrival times of air pressure disturbances for stations on Shikoku Island following the Mt. Shinmoedake eruption. The x-axis is the observation time in UTC, and the y-axis is the infrasonic pressure in Pa.

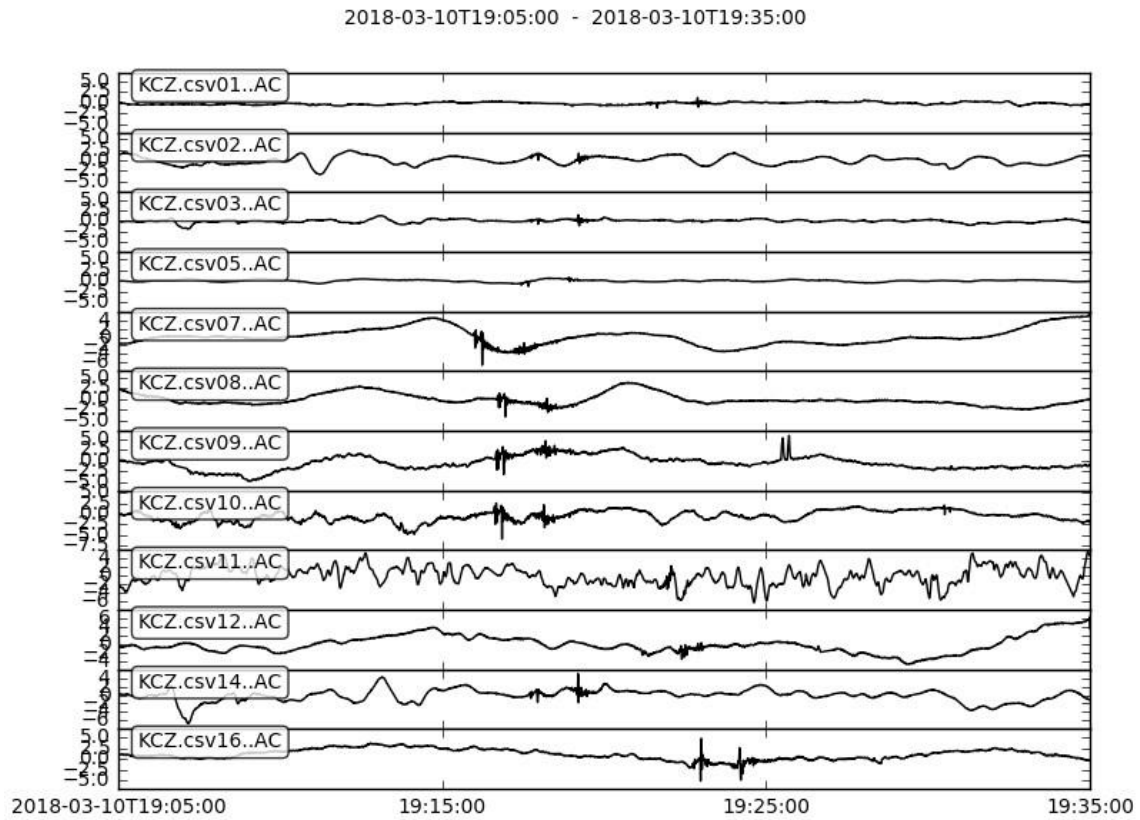


Figure S2. Infrasonic pressure data for March 11, 2018, 0405 JST showing the arrival times of air pressure disturbances for stations on Shikoku Island following the Mt. Shinmoedake eruption. The x-axis is the observation time in UTC, and the y-axis is the infrasonic pressure in Pa.

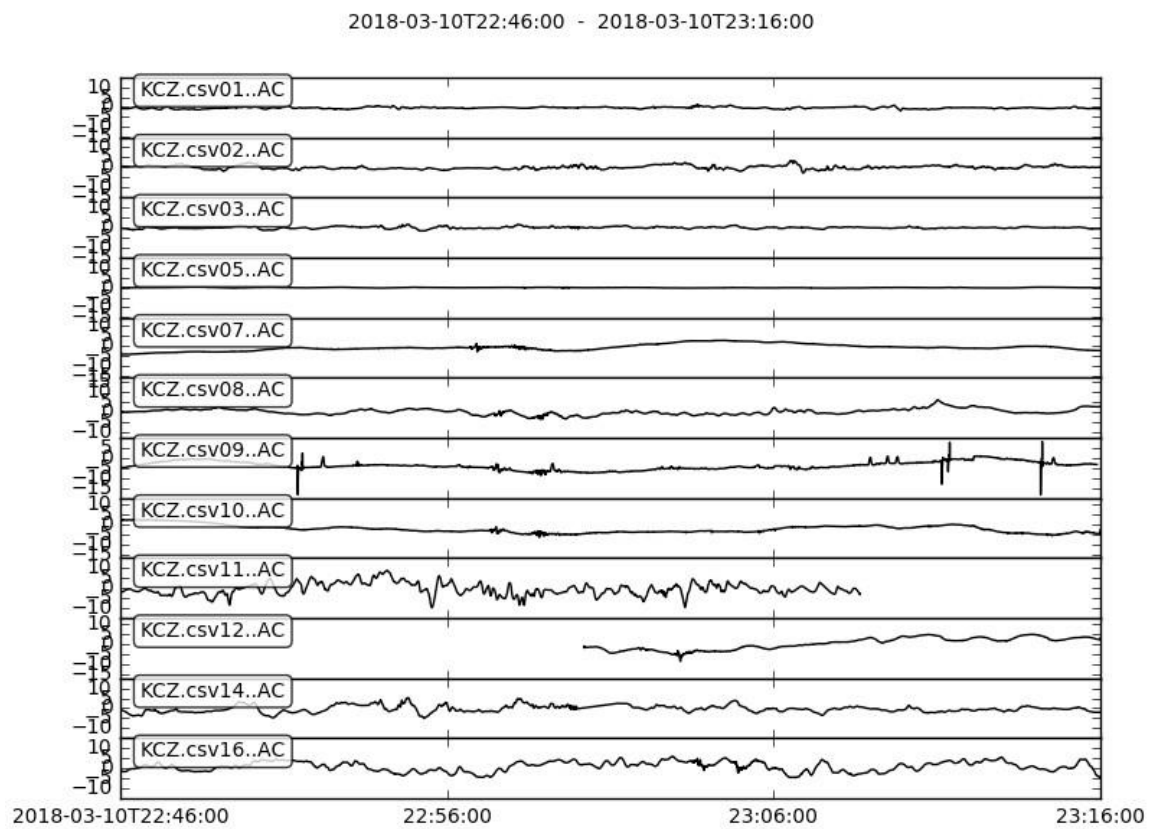


Figure S3. Infrasonic pressure data for March 11, 2018, 0746 JST showing the arrival times of air pressure disturbances for stations on Shikoku Island following the Mt. Shinmoedake eruption. The x-axis is the observation time in UTC, and the y-axis is the infrasonic pressure in Pa.

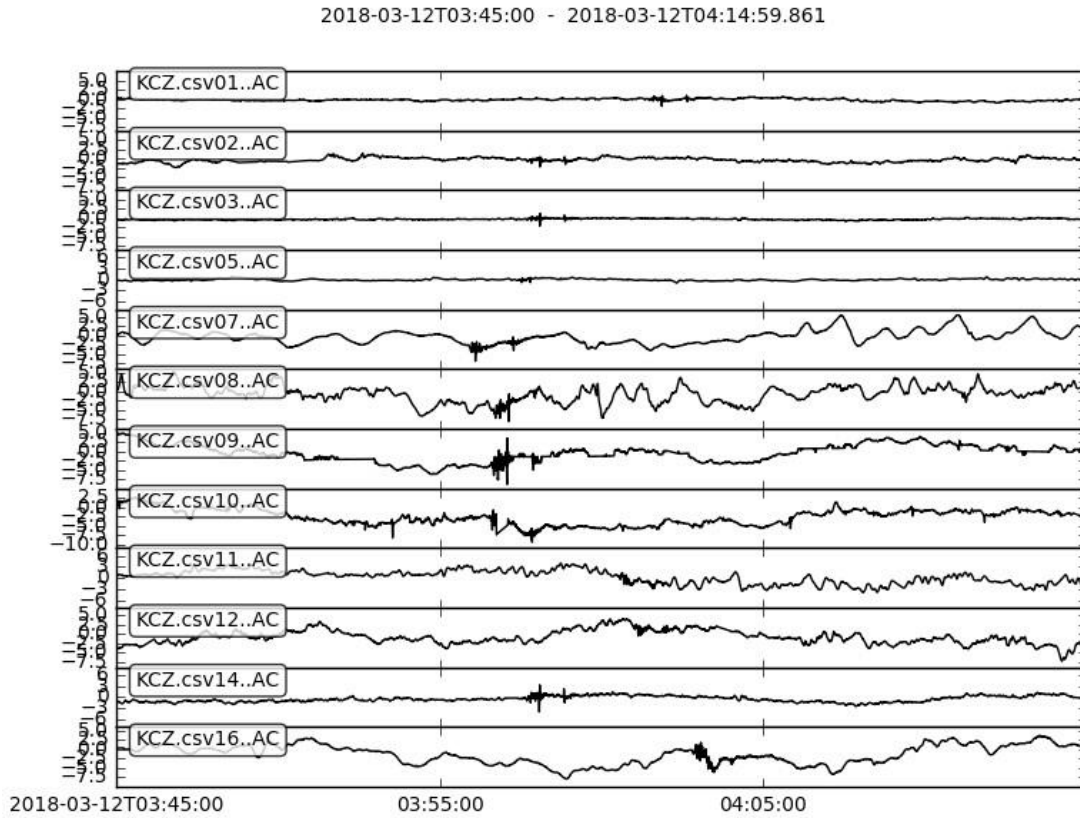


Figure S4. Infrasonic pressure data for March 12, 2018, 1245 JST showing the arrival times of air pressure disturbances for stations on Shikoku Island following the Mt. Shinmoedake eruption. The x-axis is the observation time in UTC, and the y-axis is the infrasonic pressure in Pa.

Figure 1 displays 12 time series plots, labeled KCZ.csv01..AC through KCZ.csv16..AC, arranged vertically. The x-axis represents time, with major ticks at 2018-03-15T05:13:00, 05:23:00, and 05:33:00. The y-axis for each plot ranges from -12 to 12. The plots show various patterns of activity, including spikes and sustained levels, with some panels (08, 09, 11) showing a distinct horizontal line at zero.

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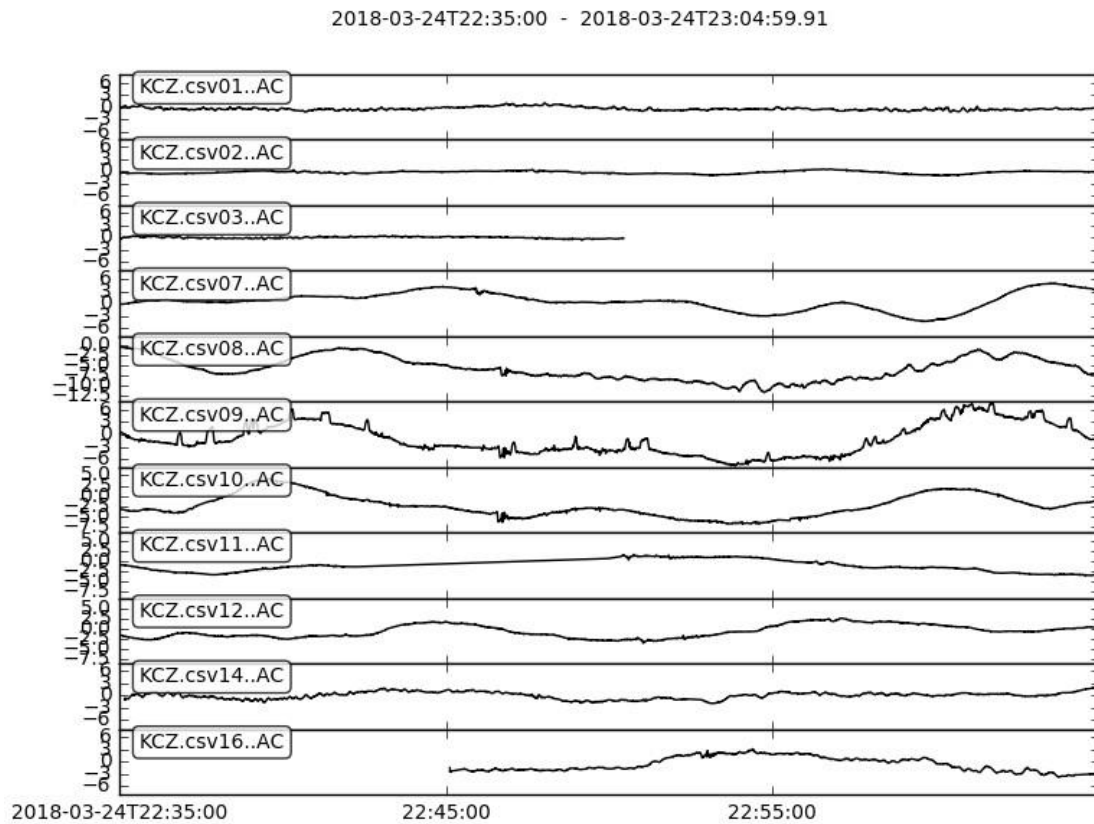


Figure S6. Infrasonic pressure data for March 25, 2018, 0735 JST showing the arrival times of air pressure disturbances for stations on Shikoku Island following the Mt. Shinmoedake eruption. The x-axis is the observation time in UTC, and the y-axis is the infrasonic pressure in Pa.

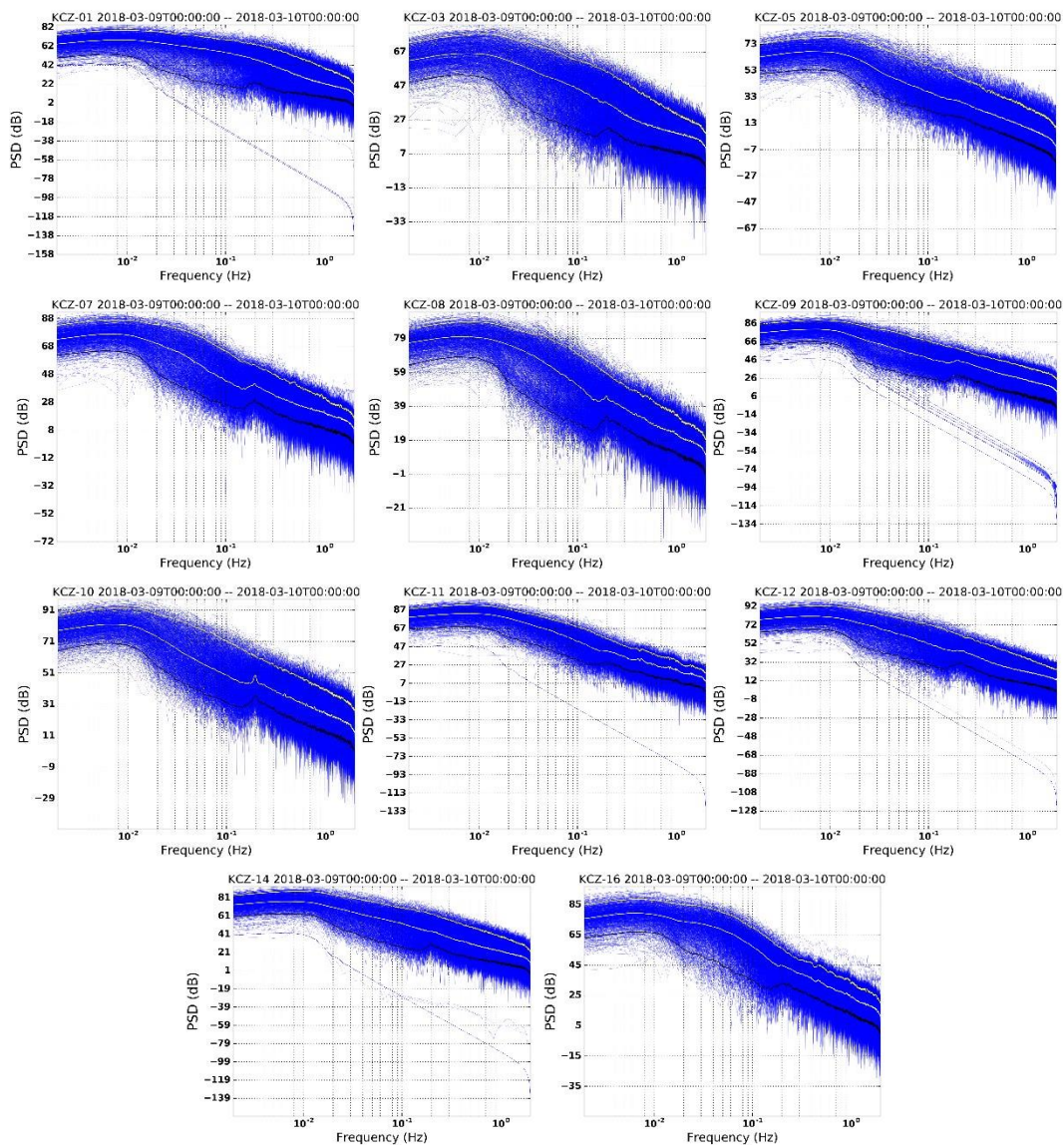


Figure S7. A set of noise-PSD plots for stations on Shikoku Island during one day period on March 9, 2018.

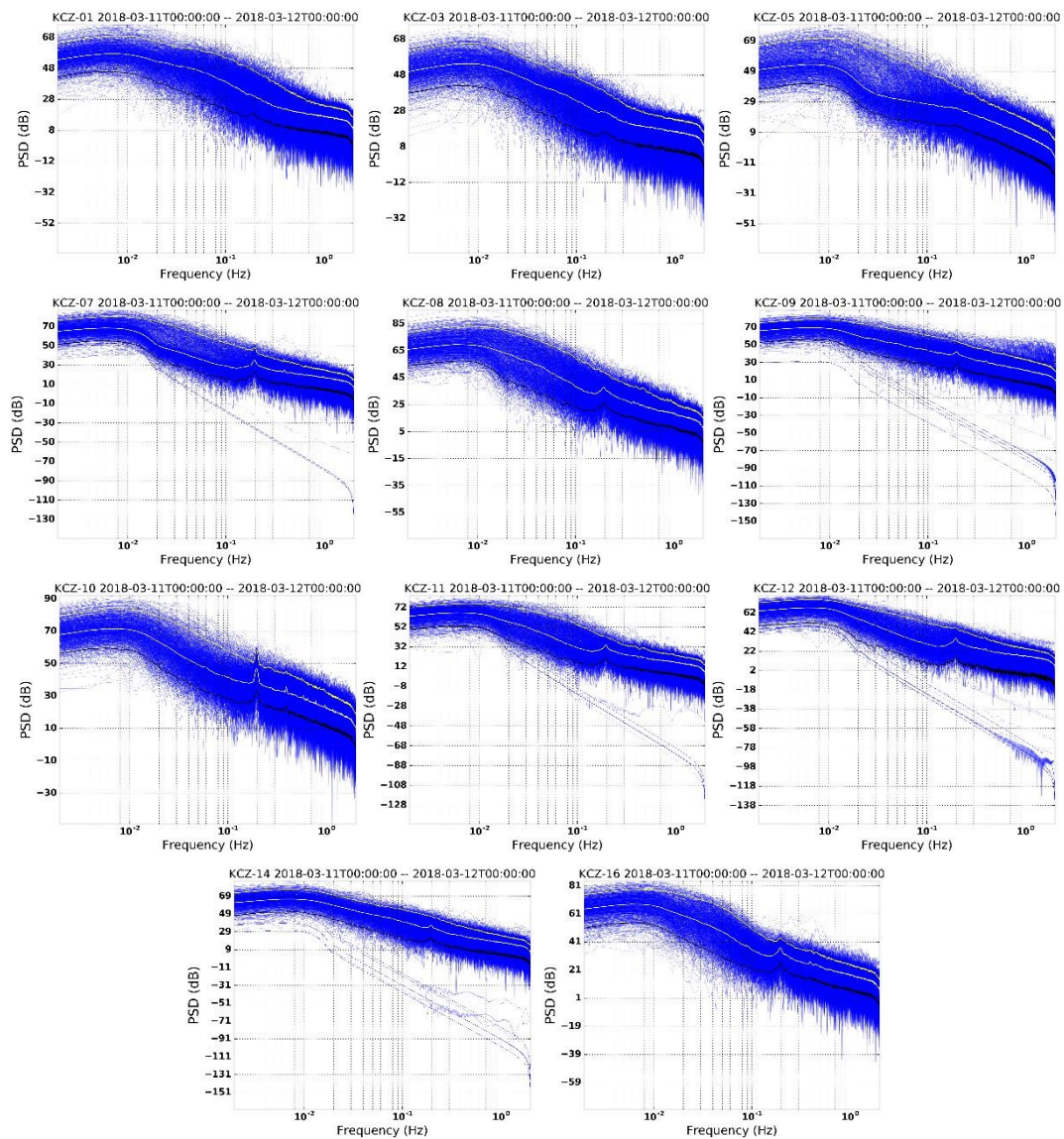


Figure S8. A set of noise-PSD plots for stations on Shikoku Island during one day period on March 11, 2018.

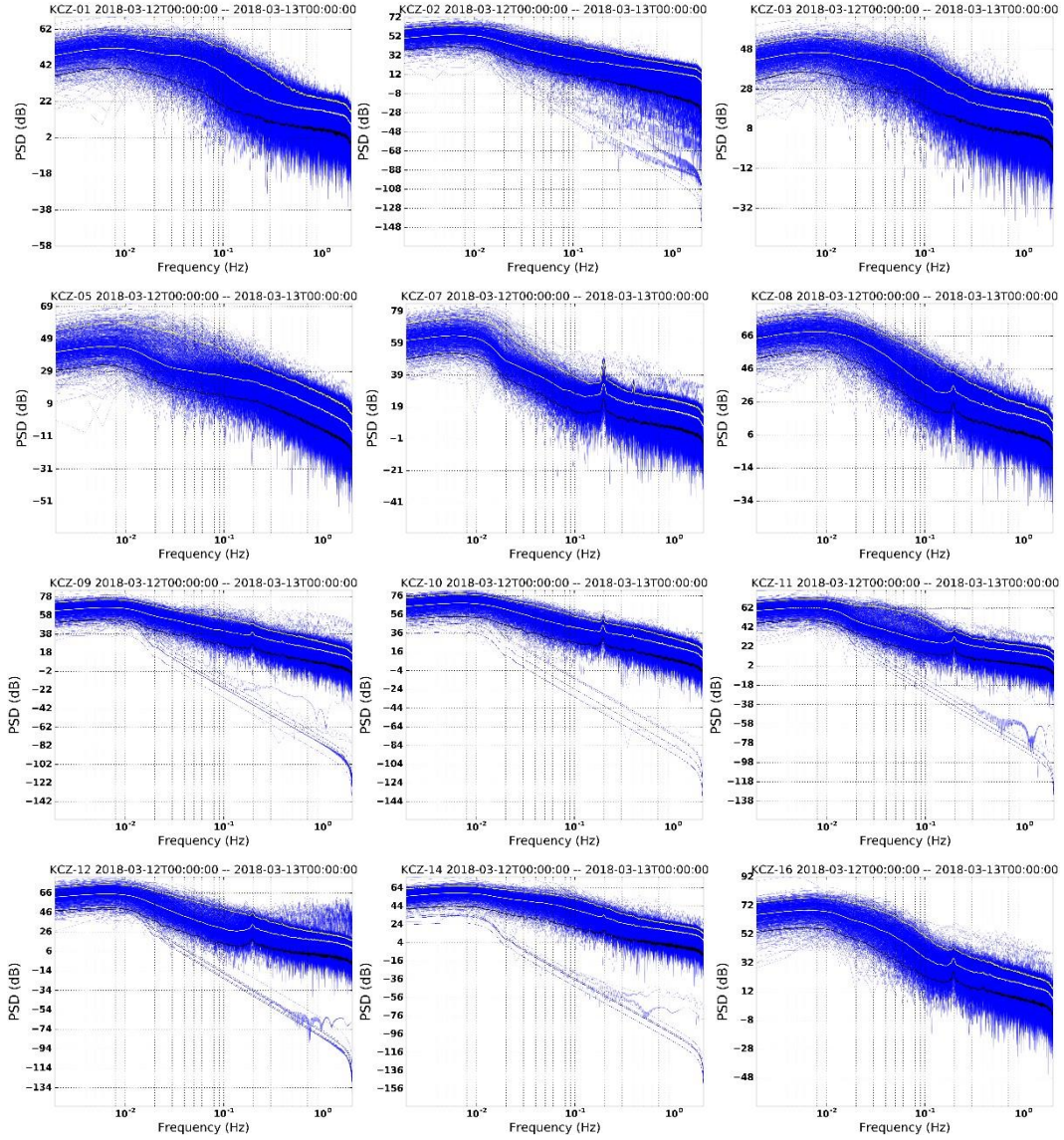


Figure S9. A set of noise-PSD plots for stations on Shikoku Island during one day period on March 12, 2018.

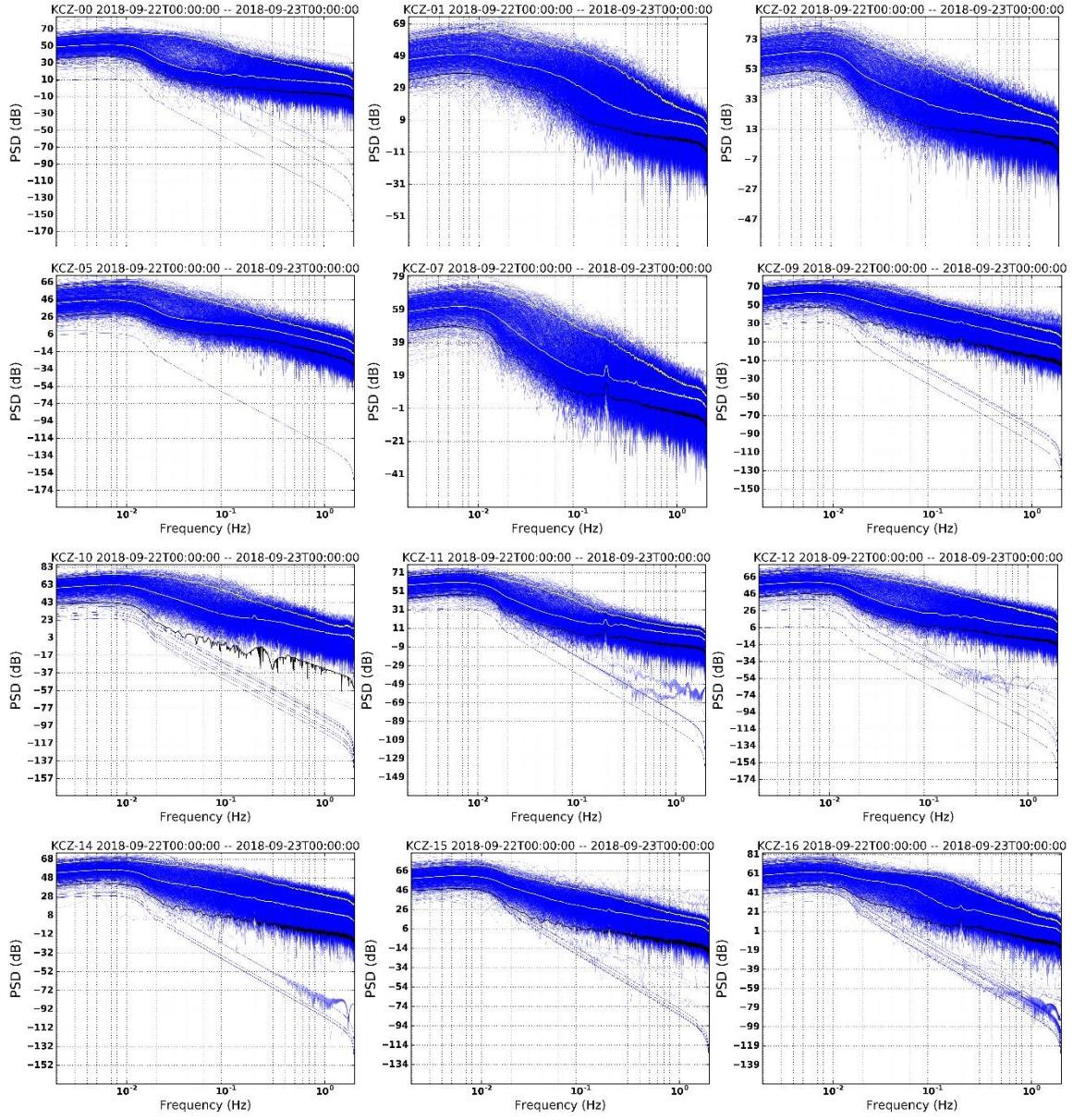


Figure S10. A set of noise-PSD plots for stations on Shikoku Island during one day period on September 22, 2018.

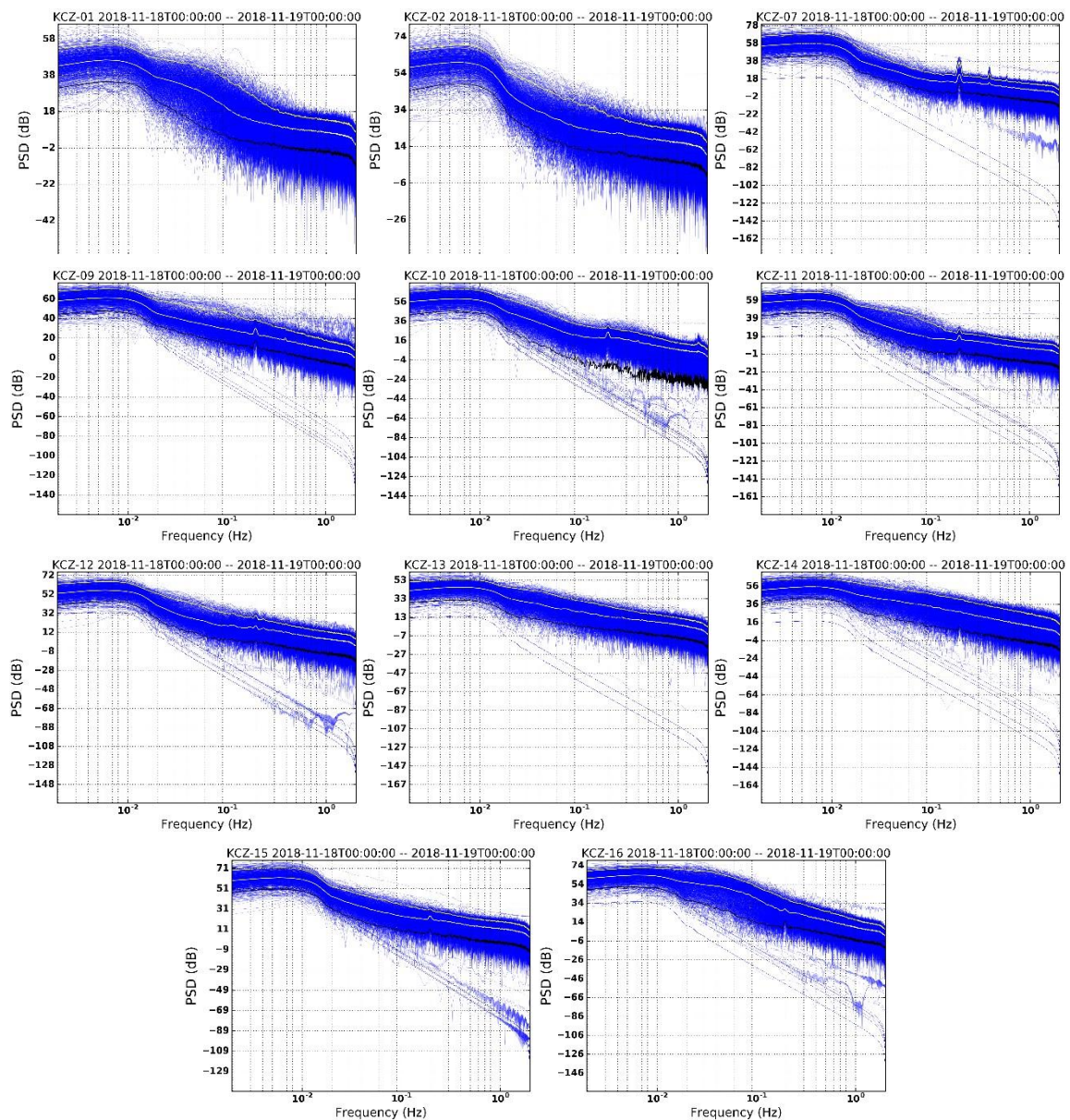


Figure S11. A set of noise-PSD plots for stations on Shikoku Island during one day period on November 22, 2018.

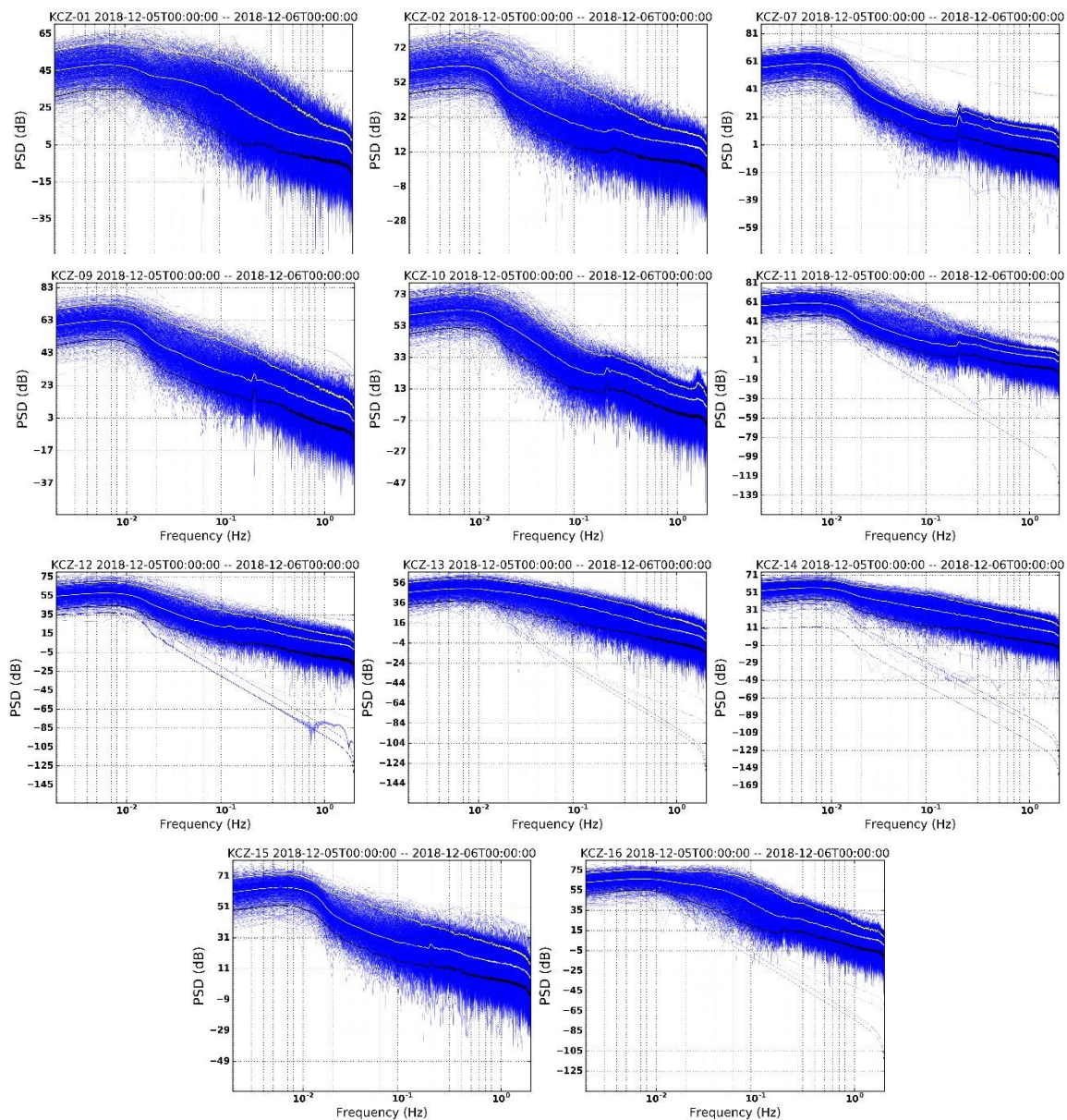


Figure S12. A set of noise-PSD plots for stations on Shikoku Island during one day period on December 22, 2018.

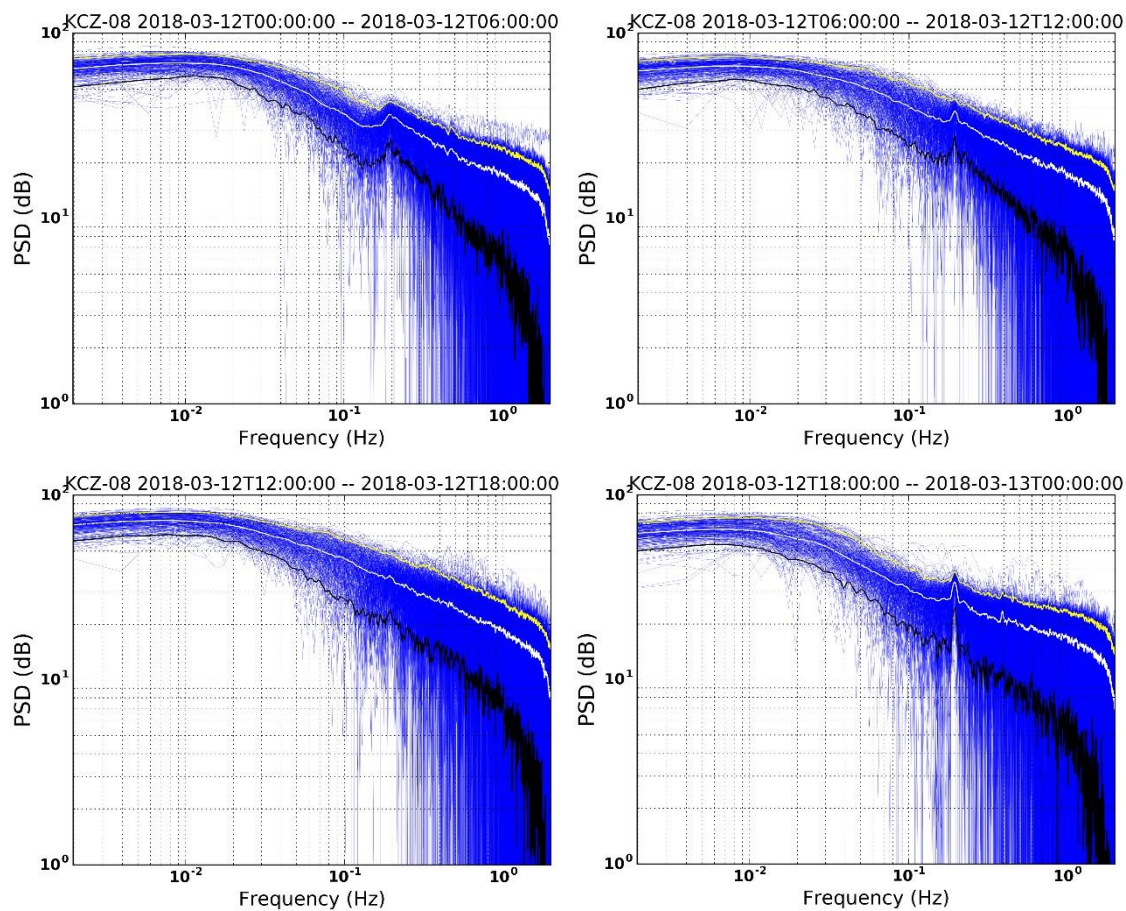


Figure S13. Power Spectral Density for station KUTo8 for all time intervals (blue), the 5th and 95th percentiles (yellow and black), the median (white) for each time.

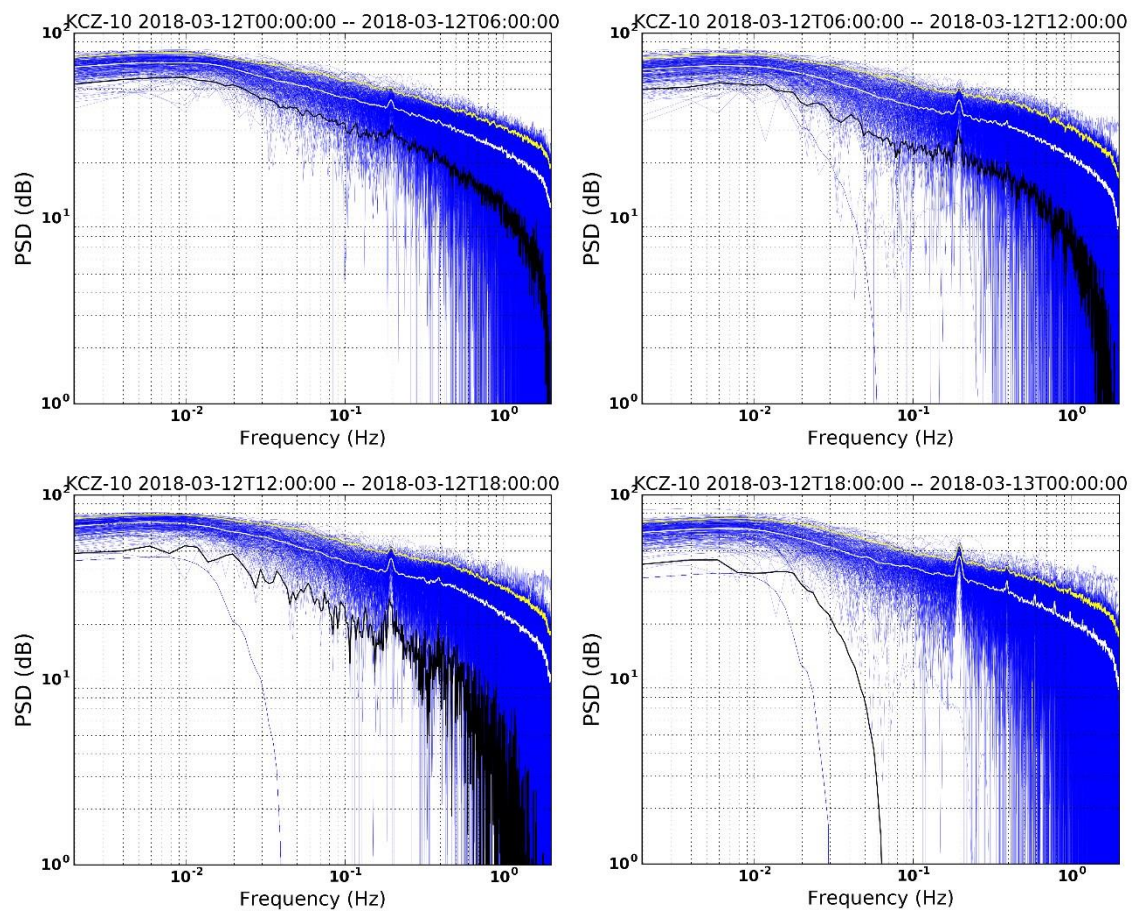


Figure S14. Power Spectral Density for station KUT10 for all time intervals (blue), the 5th and 95th percentiles (yellow and black), the median (white) for each time.

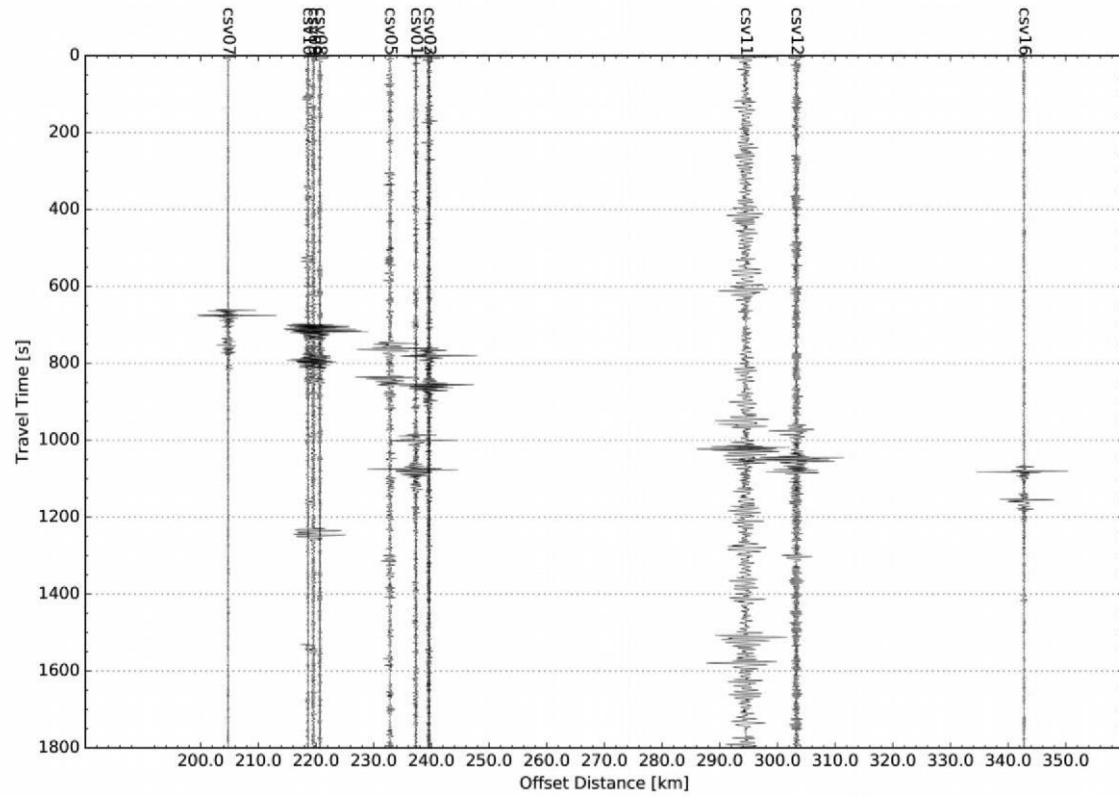


Figure S15. Records of the Mt. Shinmoedake eruptions at 0405 JST on March 11, 2018 from the stations on Shikoku Island. The results are filtered in the frequency range 1.0–1.5 Hz based on the PDF plot shown in Figure S1.

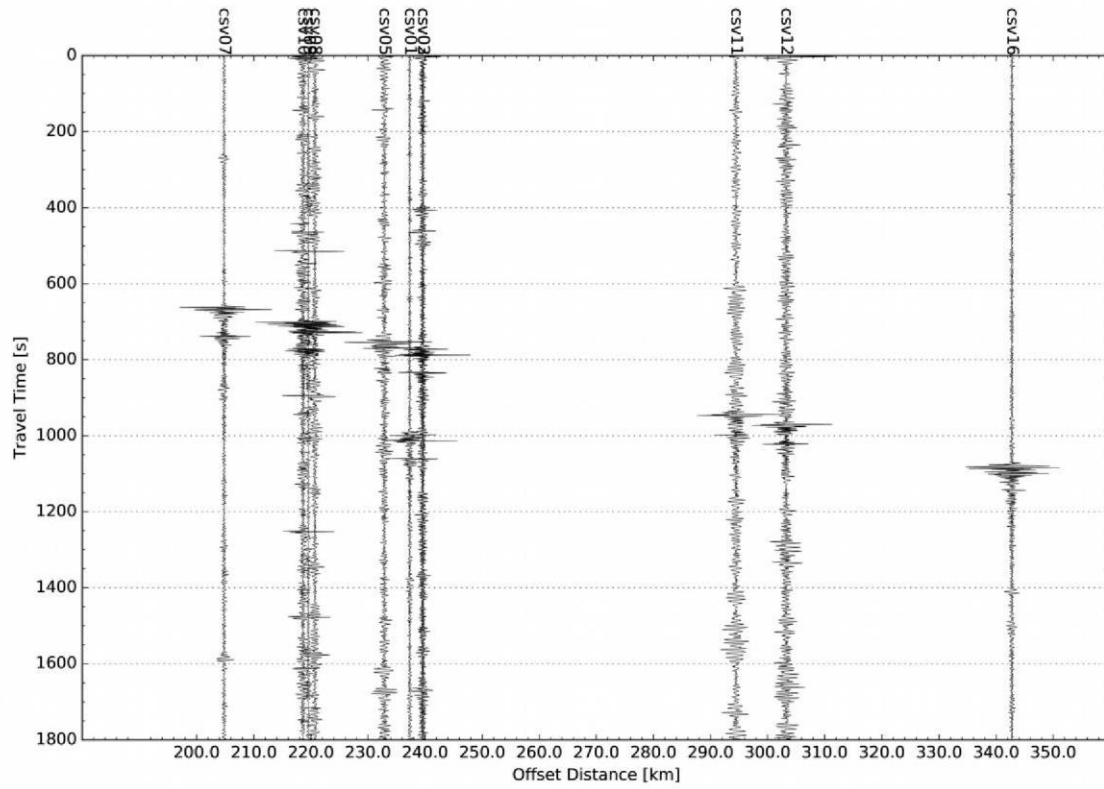


Figure S16. Records of the Mt. Shinmoedake eruptions at 1245 JST on March 12, 2018 from the stations on Shikoku Island. The results are filtered in the frequency range 1.0–1.5 Hz based on the PDF plot shown in Figure S2.