SUPPLEMENTARY MATERIAL VOLCANICA

Supplementary Material for:

A generalized deep learning model to detect and classify volcano seismicity

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Fee et al. (2025) should be cited if this material is used independently of the article.

Supplemental

Table S1: Precision, Recall, and Accuracy for each of the seven classes.

Class	Precision	Recall	Accuracy
Broadband Tremor	**0.76**	0.78	0.93
Harmonic Tremor	0.92	0.91	0.98
Monochromatic Tremor	0.87	0.92	0.97
Earthquake	0.96	0.97	0.99
Long Period	0.86	0.83	0.96
Explosion	0.82	**0.75**	0.94
Noise	0.90	0.92	0.97

Supplemental File: labels_generalized.txt. File containing information for spectrogram labels. Format is: STATION UTC-DATE CLASS.

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References

Uieda, L., D. Tian, W. J. Leong, L. Toney, W. Schlitzer, M. Grund, D. Newton, M. Ziebarth, M. Jones, and P. Wessel (2021). "PyGMT: A Python interface for the generic mapping tools". In: *Zenodo*. [Software]. DOI: 10.5281/ZENODO.4522136.

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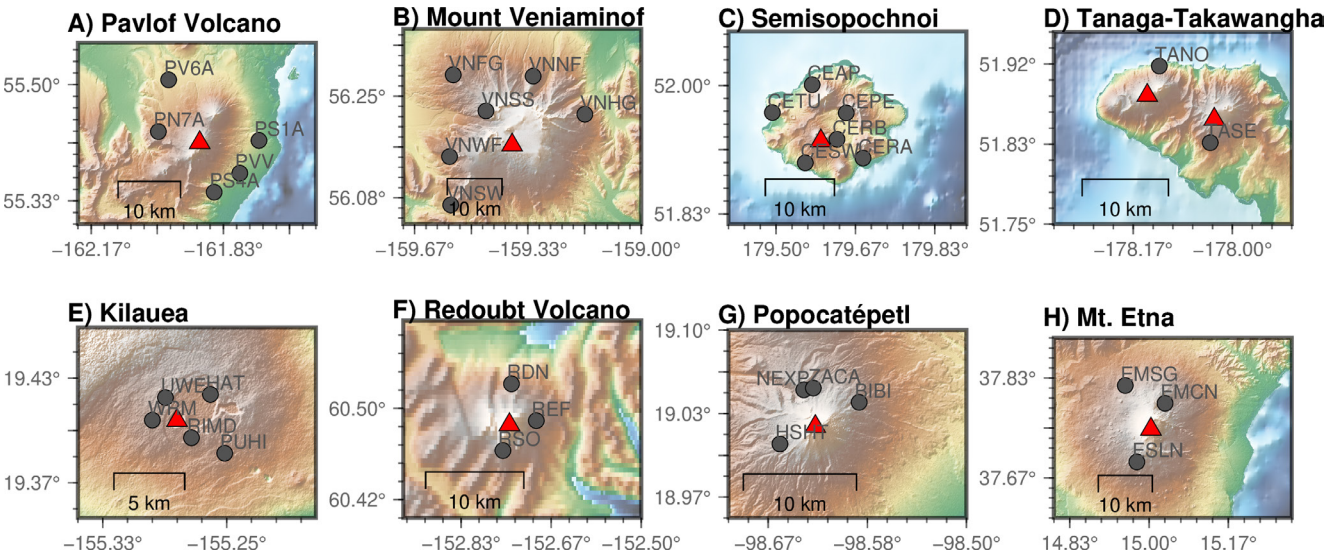

Figure S1: Map of the nine volcanoes and seismic stations used to build the training dataset. [A] Pavlof, Alaska; [B] Veniaminof, Alaska; [C] Semisopochnoi, Alaska; [D] Tanaga and Takawangha, Alaska; [E] Kīlauea, Hawaii; [F] Redoubt, Alaska; [E] Popocatepetl, Mexico; [F] Mt. Etna, Italy. Gray circles indicate the locations of the stations we use, and the red triangles are the recent eruptive vents. The figure was created using `PyGMT` [Uieda et al. 2021].

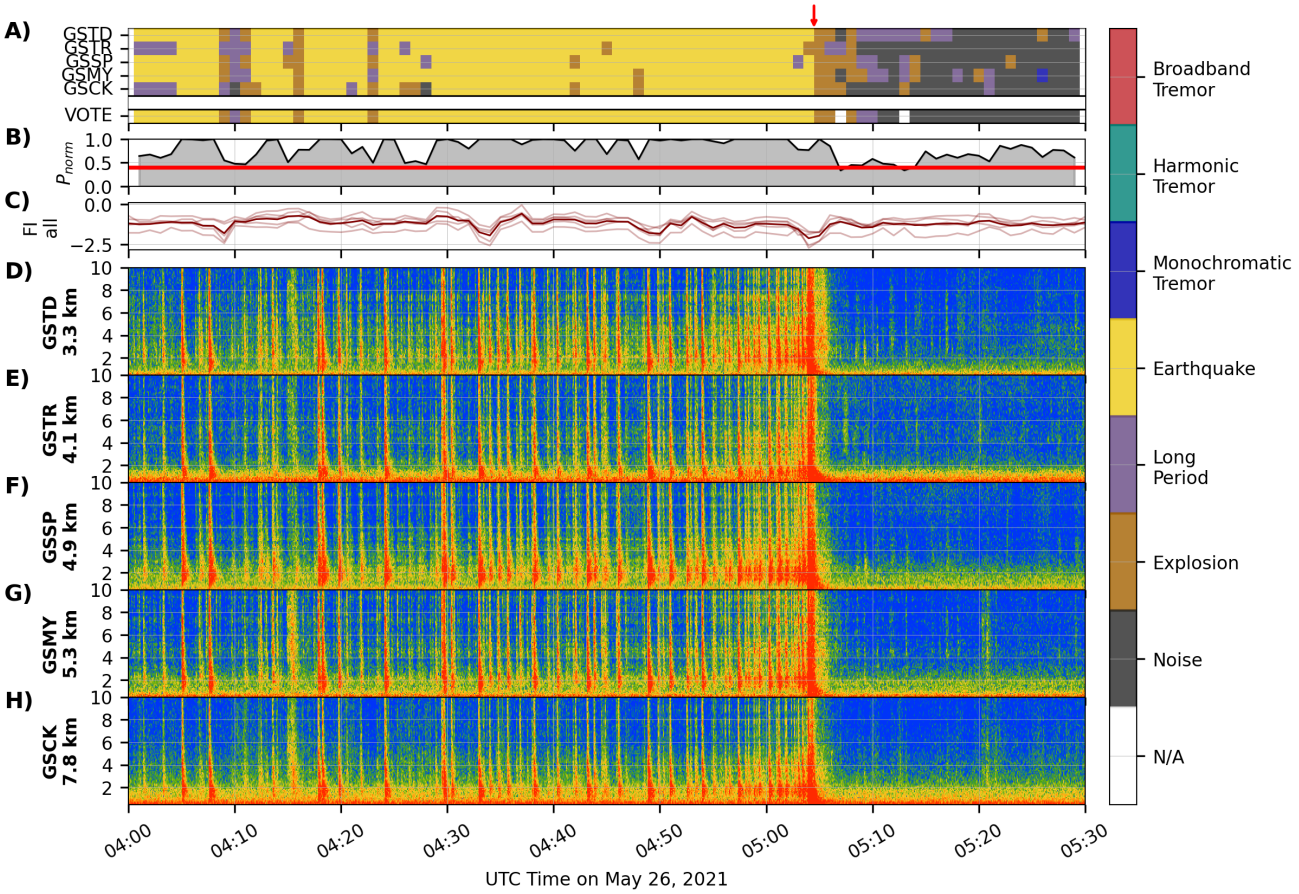

Figure S2: Generalized VOISS-Net model applied to Great Sitkin volcano seismic data between May 26, 2021 04:00-05:30. Figure layout is the same as Figure 6, except we substitute in the Frequency Index (FI) rather than Reduced Displacement.