

Additional file for:

P-wave first-motion polarity determination of waveform data in western Japan using deep learning

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Supplementary Figures:

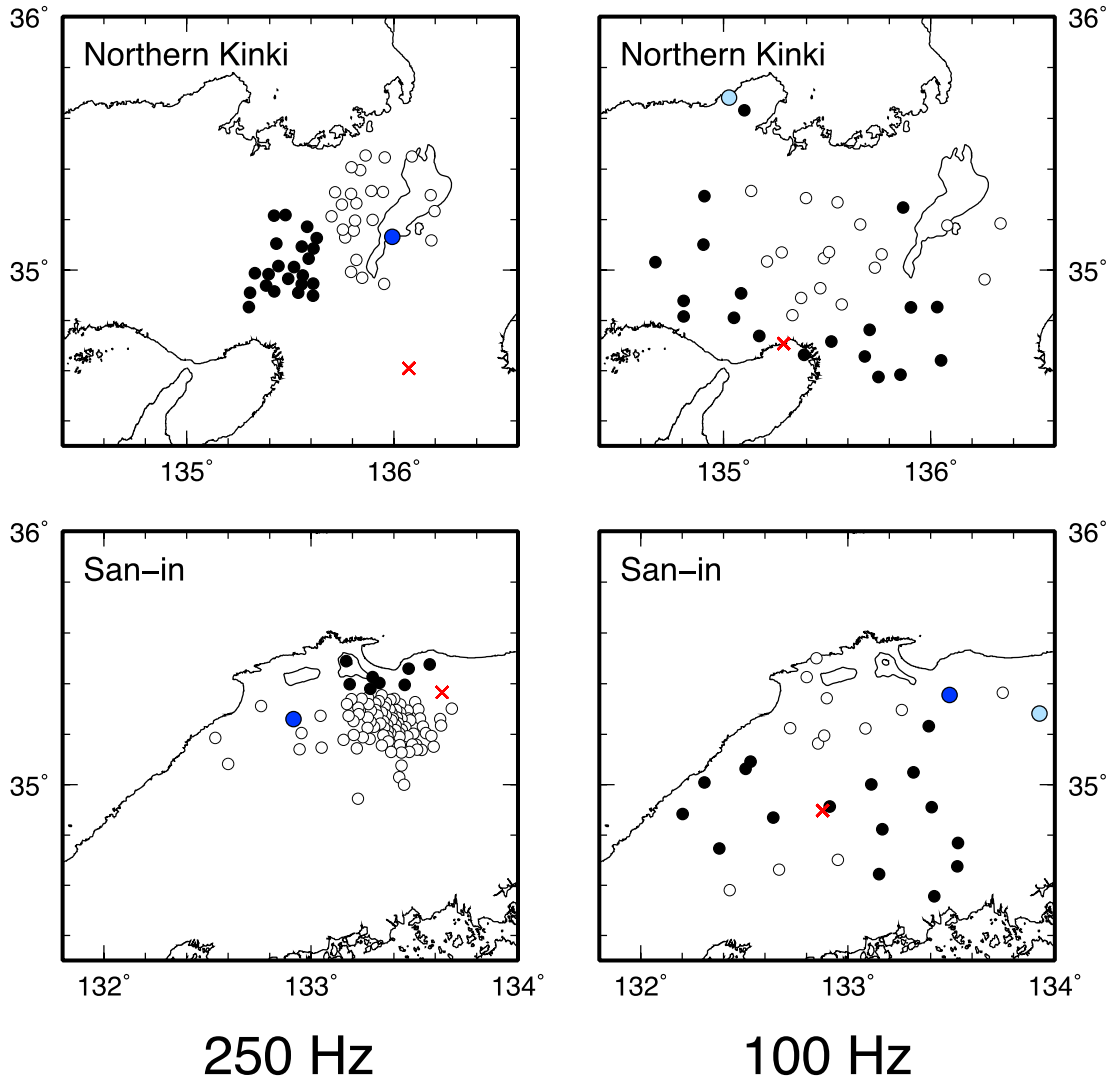


Fig. S1 Polarity plots on maps. Polarities determined by the CNN models and human experts are plotted on a map. Black and white circles represent match examples, which denote Up and Down, respectively. Dark blue and light blue circles represent mismatch examples. Dark (Light) blue means that the decision by human experts is Up (Down), while that by the CNN model is Down (Up). The red cross denotes the epicenter. We plot the polarities for the earthquake with the second most polarities read by human experts for each region (San-in or northern Kinki) and each sampling frequency (250 Hz or 100 Hz).

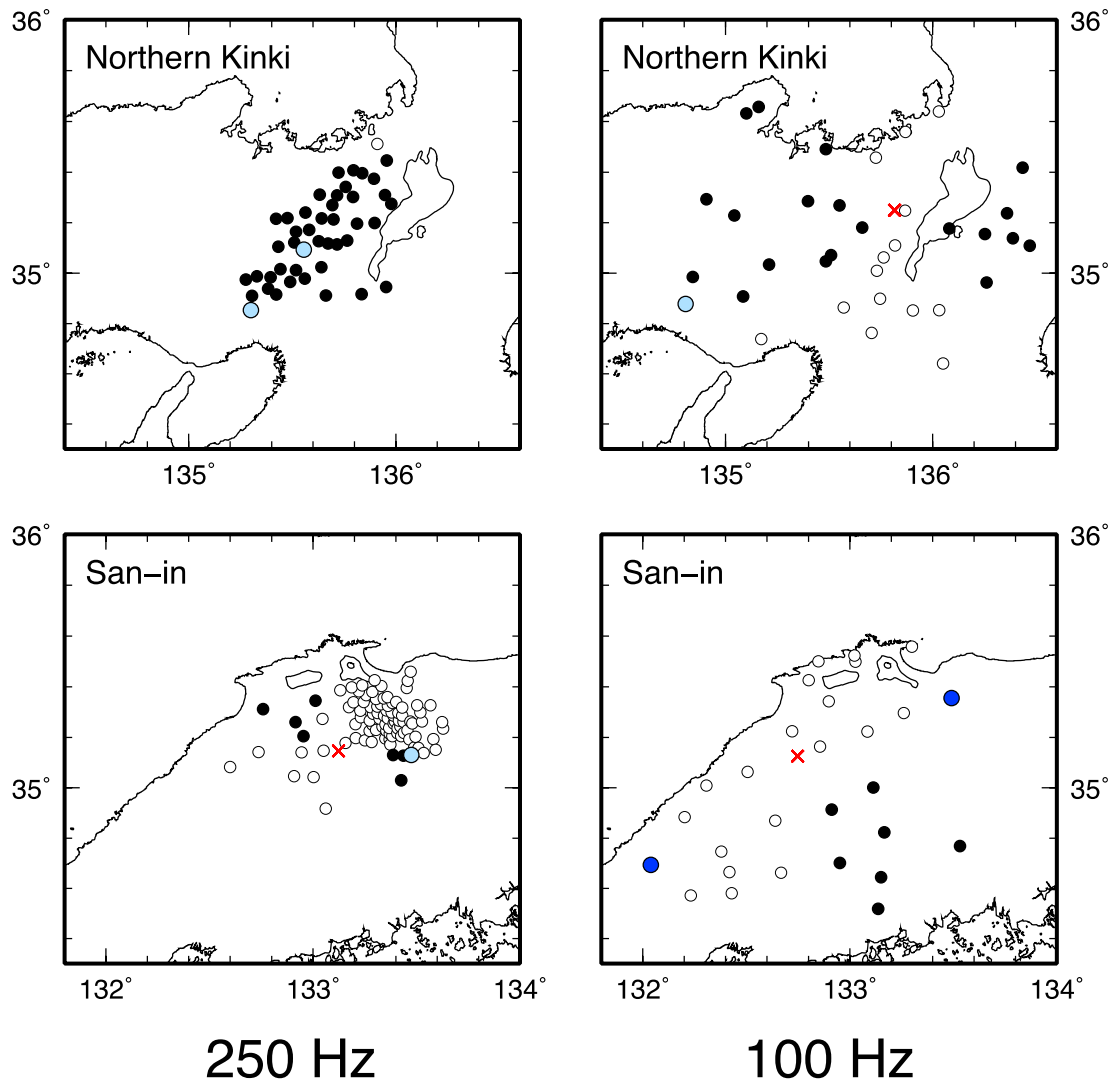


Fig. S2 Polarity plots on maps. This figure is the same as for Fig. S1, except that the polarities of the earthquake with the third most polarities read by human experts are plotted for each region (San-in and northern Kinki) and sampling frequency (250 Hz and 100 Hz).

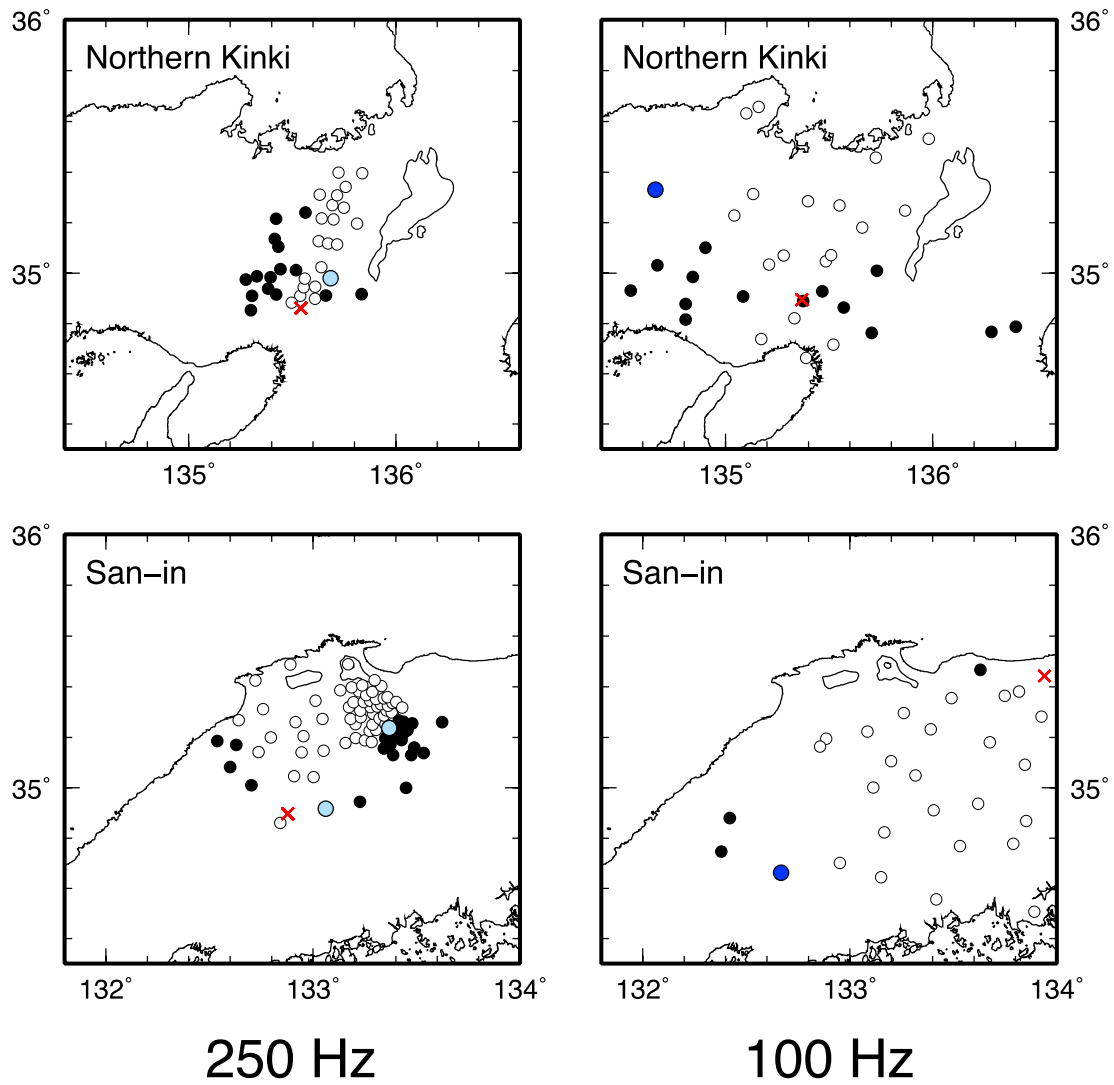


Fig. S3 Polarity plots on maps. This figure is the same as for Fig. S1, except that the polarities of the earthquake with the fourth most polarities read by human experts are plotted for each region (San-in and northern Kinki) and sampling frequency (250 Hz and 100 Hz).

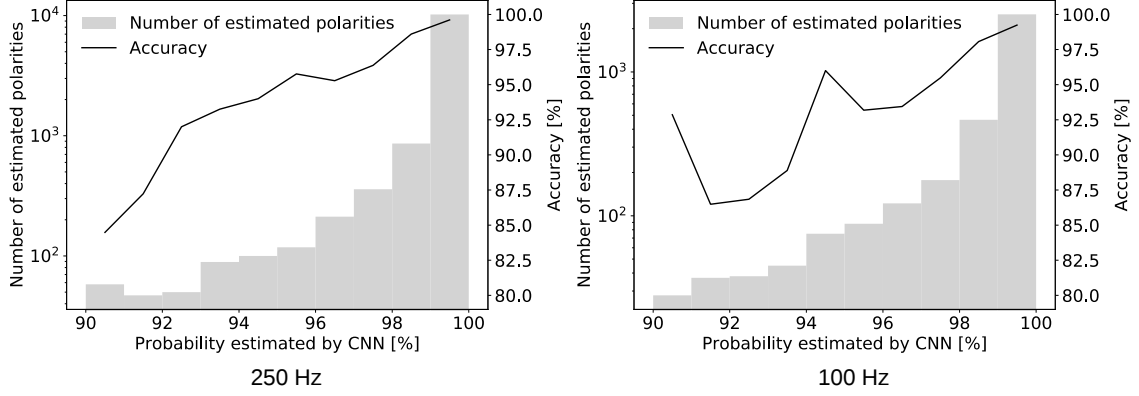


Fig. S4 Relation of the polarity probability estimated by the CNN models to the accuracy and the number of estimated polarities. The left and right diagrams show the result for the 250 Hz sampling and 100 Hz sampling data, respectively. In each diagram, the horizontal axis represents the probability (or reliability) of the polarity estimated by the CNN models; the vertical axis represents the number of the estimated polarities (histogram) and the accuracy of the estimates (solid line) defined by Eq. (7) for each probability bin. The probability bin is taken from 90% to 100% in 1% increments. Note that the scale of the histogram is logarithmic.