

Sources of P-wave Microseisms Detected with the TA Array in Alaska

We process continuous data downloaded from the IRIS Data Management Center and recorded at the TA array in Alaska to detect and locate P-wave microseisms using a backprojection method. We backproject the energy to a series of grid points covering the entire Earth, with ~400 km spacing. For each grid point—and an assumed origin time—10 min data from each element of the Alaska TA array is extracted, starting with the predicted P-wave arrival time by the 1D ak135 velocity model. For each trace, the processing involves, in succession, removing the trend and applying a filter and a taper. All traces in the array, at distances of 30–90 deg from the grid point, are stacked using a fourth-root stacking method, and the root-mean-square amplitude of the stack is assigned as the power of the specific stack. The procedure is repeated for each grid point and for origin times incremented by 5 min. The backprojection method is applied to data recorded at the Alaska TA array during 2018. We estimate the sources of P-wave microseisms in the Atlantic and Pacific Oceans and compare them with predictions of wave-wave interactions from ocean models developed under the WAVEWATCH III framework.

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