

# Signal Identification of Submarine Seismic

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International Monitoring System H phase stations have great potential for submarine earthquake monitoring in the southern hemisphere. The hydrophones could record low frequency sounds from extensive areas. However, some seismic signals from different areas would have similar characteristics in a short time interval. It is difficult to locate the epicenter using only the azimuth and arrival time from the hydrophone triplet. Therefore a submarine seismic location model was built based on the time delay of the P-wave and T-wave at a hydrophone to obtain the sound propagation distance. Arrival times were extracted based on the Akaike information criterion. Combined with the back azimuth, the event time and location could be acquired via a single triplet. Furthermore, the proposed method is applicable to the identification of hydrophone signals under the informed seismic bulletin. The correspondence between signals and earthquakes contributes to the construction of AI algorithmic datasets for seismic signal detection. Over 940 submarine earthquakes ( $\geq M 4.0$ ) were located using the proposed method, and the locations were verified by using the USGS bulletin which were recorded from 2014 to 2020 by two hydrophones triplets of International Monitoring System hydroacoustic station HA3 located at the Juan Fernandez Islands.

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## Promotional text

Acoustic signal of submarine seismic

## Oral preference format

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