ID: **P1.4-584** Type: **E-poster**

Hydroacoustic SignalsConverted at Coastal International Monitoring System Stations

Tuesday, June 20, 2023 9:22 AM (1 minute)

The hydroacoustic International Monitoring System (IMS) network was designed to detect underwater nuclear explosions. Two types of stations belong to this network. Six of them record signals with hydrophone triplets placed in the Sound Fixing and Ranging (SOFAR) channel. Remaining five are T phase, seismic stations which detect hydroacoustic signal converted to seismic wave at a steep shore slope. T phase stations measure arrival time but, unlike in case of hydrophone stations, do not provide other detection parameters (i.e. azimuth estimate). Analysts consider correlation with signals at other stations or observations for similar events to include T phase station detections in event solutions. Hydroacoustic signals generated by large magnitude seismic events are also observed at coastal seismic or infrasound IMS stations, which are configured to measure detection parameters, i.e. azimuth, or slowness. Correct identification of such signals will help analysts to include them in International Data Centre bulletins. Investigation of these additional hydroacoustic data will also allow to estimate whether detection parameters can increase confidence in correct associations of T phase station detections.

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Promotional text

Currently the main contribution of T phase stations is to constrain solution of locally recorded events by using recorded seismic signals. We believe that results of this study may help to improve T phase station contribution, which comprise half of the IMS hydroacoustic network.

Oral preference format

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Session Classification: Lightning talks: P1.3, P1.4, P5.2

Track Classification: Theme 1. The Earth as a Complex System: T1.4 Multi-Discipline Studies of the Earth's Subsystems