

# Analysis of International Monitoring System Hydrophone Array Signals for the Detection of Submarine Volcanic Activity

*Tuesday, June 20, 2023 9:10 AM (1 minute)*

International Monitoring System hydrophone stations are useful for the monitoring of submarine volcanic activity, especially in the western Pacific Ocean. Therefore, we started to routinely analyse the signals of triplet H11S, located off the coast of Wake Island, from July 2022 onwards. The SeedLink server of the Incorporated Research Institutions for Seismology (IRIS) provides the data; the SeisComP5 software is used for access and storage in daily mseed files. We process one-day hydrophone data as follows: 1. Removing the instrument response, 2. Band-pass filtering of the waveforms (4-8 Hz), 3. Semblance analysis to determine the incoming direction and apparent velocity across the triplet per 10-s time window, using intervals of 1° and 0.002 km/s (1.45 to 1.55 km/s), respectively, 4. The results are posted on our internal website. The obtained maximum semblance values typically vary from 0.5 to 0.9, and only values  $\geq 0.7$  are interpreted to be significant.

## E-mail

stan@jamstec.go.jp

## Promotional text

Processing of International Monitoring System hydrophone data (H11S) for signs of submarine volcanic activity.

## Oral preference format

**Primary author:** Mr TANAKA, Satoru (Japan Agency for Marine-Earth Science and Technology (JAMSTEC))

**Co-authors:** Mr OBAYASHI, Masayuki (Japan Agency for Marine-Earth Science and Technology (JAMSTEC)); Mr NAKANO, Masaru (Japan Agency for Marine-Earth Science and Technology (JAMSTEC)); Mr NAKAJIMA, Tomoya (Japan Agency for Marine-Earth Science and Technology (JAMSTEC)); Ms YOSHIMITSU, Junko (Japan Agency for Marine-Earth Science and Technology (JAMSTEC)); Mr METZ, Dirk (CTBTO Preparatory Commission)

**Presenter:** Mr TANAKA, Satoru (Japan Agency for Marine-Earth Science and Technology (JAMSTEC))

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

**Track Classification:** Theme 1. The Earth as a Complex System: T1.3 The Oceans and their Properties