

Small-aperture hydrophone array system for detection of hydrothermal activity beneath Suiyo Seamount

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We developed a small-aperture hydrophone array system in order to elucidate fine seismic structure beneath Suiyo Seamount, one of the most active hydrothermal sites on the Izu-Ogasawara (Bonin) volcanic front. The specification of the system is followings;

Sensor : hydrophone, 5 m interval, 40 sensors in total,

Two 100 m array cables are installed on the sea bottom in L-shaped configuration.

Sampling rate : 1000 Hz/ch., 24 bits

Recording period : continuous 7.8 days (HDD capacity 80 GB)

The hydrophone array system was successfully deployed using a remotely operated vehicle Hyper Dolphin, JAMSTEC. One of the two array cables with a length of 100 m was extended to the north and another to the east. An ocean bottom seismograph was deployed near the ch. 9 hydrophone sensor in the eastward cable.

Continuous data during Dec. 4 - 9, 2003 were fruitfully recorded. Several seismograms show clear later phases with different apparent velocities from that of the first arrivals, which indicates reflections from the scatterers beneath Suiyo Seamount.