

Preliminary report on multi-channel seismic reflection survey in the Nishi-Shichito ridge

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The Nishi-Shichito ridge is located on the back-arc of the northern Izu-Ogasawara arc, being characterized by the echelon alignment of volcanoes that be running from NE to SE. According to the past seismic reflection survey in the Nishi-Shichito ridge, thick volcanic sediments which came from the volcanic activity of the Izu-Ogasawara arc covered between echelon alignments, and the volcanism was divided into two periods (Kato[1992], Kido[2005]).

In November-December 2005, JAMSTEC conducted a multi-channel seismic (MCS) reflection survey in the Nishi-Shichito ridge using R/V KAIREI. This survey was carried out as a part of the seismic investigation of continental shelf around Japan.

During the survey, we collected 487km of MCS data along the ridge. The data acquisition was conducted by using a total of 12000 cu. in. airgun array (eight 1500 cu. in. airguns) with shot spacing of 50 m, air pressure of 2000 psi and towing depth of 10 m. The receiver was a 204-channel hydrophone streamer cable with group interval of 25 m. The range of offset was 110 to 5200 m. The record length and sampling interval were 15 s and 4 ms, respectively.

We applied a standard 2D seismic data processing sequence: trace edit, geometry set, bandpass filter, amplitude recovery, wavelet processing, deconvolution, DMO, velocity analysis, multiple suppression, NMO correction, mute, CMP stack, poststack time migration, and so on, using FOCUS and ProMAX software.

We report the preliminary interpretations from the processing result. In particular, we will present the sedimentary structure that was influenced by the volcanic activity in the study area from the seismic reflection profile.

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