

A high-resolution crustal structure of Enderby land, east Antarctica, revealed by high density seismic exploration.

Tomoki Tsutsui[1], Hiroshi Murakami[2], Hiroki Miyamachi[3], Shigeru Toda[4], Masaki Kanao[5], SEAL Geotransect Group Masaki Kanao

[1] Akita Univ., [2] Technical Center for Seismological Observations Ltd., [3] Earth and Environmental Sci., Kagoshima Univ., [4] Earth Sci., AUE, [5] NIPR

<http://www.akita-u.ac.jp/>

A seismic survey with a high density network is performed by JARE41 in the austral summer of 1999 to 2000. The seismic line is spread out up to 190km along Mizuho traverse route from the base camp. 160 seismic stations that are programmed on timer operation are installed. This survey geometry enables us to apply reflection analysis. A single fold profile and velocity structure for JARE41 seismic line is obtained.

A detailed structure in the continental margin of Antarctica will be discussed in this presentation.

A seismic survey with a high density network is performed by JARE41 in the austral summer of 1999 to 2000. The seismic line is spread out up to 190km along Mizuho traverse route from the base camp. 160 seismic stations that are programmed on timer operation are installed. This survey geometry enables us to apply reflection analysis. A single fold profile and velocity structure for JARE41 seismic line is obtained. Several clear reflections are observed down to 15s of normal two way time and some of these reflectors are tracable over full spread of the seismic line. The same reflector which had been described in ITO and KANAOK (1995) as Moho discontinuity is also detected. This reflector is located at approximately 44km beneath the shot point S-6 and at approximately 31km below the datum beneath the coastal end of the profile. The velocity functions obtained in this study increases with depth and is lower than those from the previous study down to 5s of normal two way time. The velocity function from the previous study does not lead a better result. There is some kind of transition locates in the neighborhood of the shot point S-4. Although velocity of the top crust does not change in this place from refraction analysis, the aspect of involved reflection changes at this location.