

Features of seismic waves recorded by deep exploration on Mizuho Plateau, Antarctica: Responses from valley structure

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Seismic waves from natural sources were recorded in seismic exploration experiments in the January of 2002 by the Japanese Antarctic Expedition. Three kinds of seismic waves were recorded: (1) a teleseismic event occurred at Kermadec Is. region, (2) local icequakes and (3) an unidentified event. The teleseismic waves show high signal-to-noise ratio in spite of a small magnitude of the event: this indicates a great feasibility of the observation to study not only local shallow structure but also deep structure of the earth by using teleseismic events. Frequency contents of the waveforms show discordances along the observation line. Frequency content of 2.0 Hz is very small in the waveforms recorded by stations at the middle part of the observation line. On the other hand, frequency contents of 1.5, 3.0 and 5.0 Hz are large in the records of these stations. These stations are located just above the valley topography of interface between the ice sheet and the upper crust, which has been revealed by the seismological experiments of the SEAL deep seismic experiments.