

Reanalysis of the crustal structure at the Niigata-Kobe Tectonic Zone in the Chubu region

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Introduction

The Philippine Sea plate is descending into the mantle beneath the Honshu with a velocity of several cm/year. From GPS data, concentrated deformation zone along the Japan Sea coast was discovered (e.g., Sagiya et al., 2000). The deformation belt was named as Niigata-Kobe Tectonic Zone (NKTZ). In 2001, a seismic experiment with 6 explosive sources and 391 seismic stations was conducted in August at the central Japan region. Several analyses had been done using the data of the experiment (Iidaka et al., 2003, Koike, 2003). The obtained crustal structures were different. The most different crustal structure was obtained beneath the NKTZ.

In 1967 and 1968, seismic experiments were conducted at the central Japan region. We reanalyze the seismic structure in the central Japan using the seismic experiments data.

Data

At the experiment in 2001, the length of the profile line was 262 km. The 391 seismic stations were located on the profile line. 6 shot points were located on the line. At the seismic experiment in 1967, on the other hand, 22 explosions were shot in Japan Sea. About 23 seismic stations were operated in the central Japan area.

Results

The travel time data of the seismic experiment in 1967 can be explained by the ray-tracing with the seismic structure model of Iidaka et al. (2003). However, the seismic structure at the boundary area between the Chubu region and Japan Sea region is sensitive to estimate the theoretical travel time. More detail analysis considering the seismic structure at the transition zone will be required to reveal the seismic structure beneath the NKTZ.