

Median Tectonic Line inferred from the surface and vertical seismic profiling data around the Iwatsuki deep-well

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Recently Takagi et al.(2006) have conducted detailed petrological and geochronological re-analysis of some core samples around 3500m in depth at the Iwatsuki deep-well drilled by National Research Institute for Earth Science and Disaster Prevention (NIED) in 1971. They have suggested that the core samples are correlated with the Ryoke belt and that the Median Tectonic Line (MTL) extends within 500m to the south of the core site. NIED have also conducted the vertical seismic profiling and usual surface reflection profiling in and around the deep-well (Yamamizu et al., 1992a, 1992b; Kasahara et al., 1992). As, according to the MTL location suggested by Takagi et al.(2006), these seismic reflection data may include some information on the MTL, we re-analyzed these seismic reflection data.

Due to limited vibrating points and high cultural noises, it is very difficult for the surface reflection data to show clear images of deeper part. Re-analysis of the survey data, however, shows many good reflectors down to about 2s in two-way traveltime (about 2.3km in depth) and some poor reflectors below 2s. The shallower part is nearly horizontal, but the deeper part below about 2.3s (about 2.8km) may be dipping northward. The VSP data have good S/N ratio and show many reflectors of good quality down to the bottom of the well and even beyond it. The reflectors can be easily correlated with those of the surface reflection data. From the asymmetric dip pattern between the downgoing and upgoing waves, those reflectors below about 2.8km is dipping. At present, the northward dipping reflector around 4km in depth may be correlated to the MTL. To understand detailed structure of the MTL, further study should be done.

Kasahara et al.(1992) Programme and Abstract, Seismol. Soc. Japan, No.2, 15.

Takagi et al.(2006) Geol. Soc. Japan, 112, 53-64.

Yamamizu et al.(1992a) Programme and Abstract, Seismol. Soc. Japan, No.1, 142 (1992 Japan Earth and Planetary Science Joint Meeting).

Yamamizu et al.(1992b) Programme and Abstract, Seismol. Soc. Japan, No.2, 14.