

Low resistivity zone beneath the seismic belt in the San-in region, Southwestern Japan and its implications

Naoto Oshiman[1]; Ichiro Shiozaki[2]

[1] DPRI, Kyoto Univ.; [2] Dept. of Civil Eng., Tottori Univ

In the San-in region, the Tottori and surrounding region in the northern part of Chugoku district, southwestern Japan, epicenters of microearthquakes are remarkably distributing within a line belt with a width of about 4-9 km along the coastal line of the Sea of Japan. The depths of the hypocenters are located up to about 10km depths. In the seismic belt, several large earthquakes of M6.2-7.4 took place in 1943, 1983 and 2000. Moreover, quaternary volcanoes, such as Daisen volcano and Oginosen volcano are also located in the seismic belt.

Wide-band magnetotelluric (MT) observations have been made along survey profiles of almost N-S direction in the San-in region since 1998, to investigate heterogeneity in the crustal electrical resistivity structure. Shiozaki et al. (1999), Shiozaki and Oshiman (2000), and Kasaya et al. (2002) found the low resistive region beneath seismogenic zone of the high seismicity belt on each MT profile line, and that the upper resistive crust corresponds to the seismogenic zone in the Tottori and northern Hyogo region. The low resistive region found along each MT profile seems to form a conductive zone extending in the almost E-W direction beneath the seismic belt extending in the almost same direction of the conductor. This result strongly suggests the existence of crustal fluid beneath the seismogenic zone in the focal area.

We will summarize characteristics of heterogeneity in crustal resistivity structures obtained around the San-in region, so far, and its implications.