

Relationship Between the Deep Resistivity Structure and Seismicity in the Eastern Part of San'in Region, Southwestern Japan

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The 2000 Western Tottori earthquake happened at 13:30 on Oct.6 in 2000. This presentation gives a summary of the wide band MT investigation which was carried out in and around Tottori prefecture, including the focal region of the 2000 Western Tottori earthquake, in order to determine the deep crust resistivity structure.

An assumption as for the cause of the earthquake, that is 'there is a deep crust fluid in San-in region. The fluid causes a big earthquake like the Western Tottori earthquake and also causes micro seismic activity with a linear distribution in this region.' is thought out. The purpose of this study is to examine the reasonability of this assumption.

The 7 MT observation lines are set up for this study. The preliminary 2 dimensional models obtained from 6 profiles are compared with each other and the relation with seismic activity is considered. The relationship between the deep resistivity structure and seismicity shows that the hypocentral area correspond to the resistive region underlain by a deep crustal conductors (less than 50 ohm m). If the deep crustal conductive region could be related to the deep crust fluid, it would be shown that our assumption is qualitatively correct. However, a physical model, in which 'the deep crustal conductive region' can be quantitatively replaced by 'the deep crust fluid', has not been obtained.