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東北日本弧プレート境界および前弧間の比抵抗不均質
Electrical resistivity heterogeneity between the trench and fore-arc area in NE Japan arc

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We discussed 2-D resistivity distributions around the rupture zone of the 2011 Tohoku earthquake (M9.0) along latitude 38 degrees north and 39 degrees north in order to clarify structural properties and fluid distribution. Magnetotelluric (MT) impedances were obtained mainly in the ocean using ocean bottom electro-magnetometers (OBEMs). Long period land MT data also obtained near the coastline. Based on these data, we carried out 2-D resistivity inversion after the evaluation of 3-D bathymetric effect. The inverted resistivity model in the survey line of latitude 38 degrees entirely consists of conductive surface layer ($<$ 3 ohm-m) and subsequence resistive area ($>$ 1000 ohm-m). The thickness of surface conductor is a few km at landside of trench axis. On the other hand, the conductor distributes from surface to about 10 km deep in the Pacific plate and thus seems to correspond to the oceanic crust. The oceanic crust conductor can be recognized after the subduction, however, is disappeared at the about 20 west of the trench axis. It implies fluid dehydration from fluid rich oceanic crust soon after the subduction. In the presentation, resistivity distribution in the cross section along latitude 39 degrees will be discussed.

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