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## Resistivity structure in southern Tohoku region inferred from Wide-band MT surveys

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In the tectonic zone, dehydrated fluid from a subducted oceanic plate is estimated to be localized in the crust and the upper mantle. It is considered that identifying the localized fluid is the critical key to clarify the mechanism of tectonic zone. Therefore, measuring of electrical resistivity structure which is highly sensitive to fluid, is thought to be contributing to clarify the mechanism of the tectonic zone. We started wideband magnetotelluric (MT) measurements in the northeastern margin of Japan sea tectonic zone since 2008. We estimated an eastward dipping low resistivity zone probably along the eastern Shonai plane active fault from 2D analysis. However, the whole feature of the low resistivity zone was not clear in the measurements.

To elucidate the spatial extent of the low resistivity zone, additional three lines of MT measurements over 50 km long were performed in the northwestern part of Tohoku region in 2009. The measurements have been continued about 20 days at each site by using 15 measurement devices. The source of electromagnetic induction was very weak during the period because of the very weak solar activity. However, we are able to obtain enough quality impedance responses because of using the advanced robust code of BIRRP (Chave and Thomson, 2004) for the impedance response and done the long period measurements. In this presentation, we will discuss the whole feature of the low resistivity zone and also the mechanism in the tectonic zone from estimated 2D resistivity structures of all measurement lines.

Keywords: Magnetotelluric method, tectonic zone, resistivity structure