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## Electromagnetic measurements to image geofluid in three-dimensions under NE-Japan arc

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Fluids in the crust play an important role in volcanic processes and earthquake generation processes. Electrical resistivity is a geophysical parameter which is sensitive to the existence and connectivity of fluids. Thus, by imaging the resistivity by electrical induction method such as magnetotellurics, we can get important information on the amount, chemical composition and transport properties of fluids.

We have started magnetotelluric measurements in the NE Japan using wideband (0.01s–1000s) and long period (10s?20,000s) measurements. The wideband measurements are focused around the Onikobe caldera and the surrounding regions. In 2009, Thirty magnetotelluric soundings were carried out in and around the Onikobe caldera. We have found the lower crustal conductor with N-S strike directions and its shallower continuation to the Onikobe caldera, which has E-W directions representing the E-W tectonic compression. In 2010, we had 30 more stations to the south of the Naruko volcano, covering 20km x 20km.

In addition to the wideband measurements, we have made long period measurements to image the upper mantle structure. We have 32 long period stations with 20km grid spacing in order to image the upper mantle.

We will show some preliminary results on those on-going measurements.

Keywords: geofluid, magnetotellurics, electromagnetic method, resistivity