Resistivity structure around the Kuju volcanic group

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Kuju volcanic group is located at a boundary of Kumamoto Prefecture and Oita Prefecture, Kyushu, Japan. Iwo-yama is active fumarolic activity area at central part of the volcanic group. Yoshikawa et al.(2005) derived the subsurface seismic velocity structure of this volcanic group and pointed out the possibility of the existence of magma chamber at 11 km depth beneath Iwo-yama. Mizutani et al.(1968) showed that volcanic fluid is supplied to surface. But it is not cleard where volcanic fluid ascends to surface. .The purpose of this study is to infer the volcanic fluid path. We carried out campaign survey using the wide-band MT (Magneto-Telluric) around Kuju volcanic group in Sep. to Oct., 2014. From the data obtained by this survey, we investigated the detailed 2D subsurface resistivity structure by the inversion method of Ogawa and Uchida (1996). In this presentation, we will show the resistivity structure along two observation lines which is passing Iwo-yama and east side of it. We found the following common features in the resultant resistivity models along these two observation lines.Near the surface, there is a low resistivity layer. This layer can be interpreted as the aquifer that consists of the underground water containing volcanic gases.There is high resistivity area beneath the volcanic group from 1km to 6km depth. This high resistivity area is surrounded by low resistivity area. The high resistivity body is related with high Vp and Vs religion that was found by Yoshikawa et al. (2005).Two low resistivity areas correspond with low Vp and Vs religion that was found by Yoshikawa et al. (2005). We are considering that high resistivity body reflects an instructive rock and that low resistivity bodies may indicates geothermal fluid.

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