Japan Geoscience Union Meeting 2014
(28 April - 02 May 2014 at Pacifico YOKOHAMA, Kanagawa, Japan)
©2014. Japan Geoscience Union. All Rights Reserved.

SVC51-02 Room:312 Time:April 29 14:30-14:45

Resistivity structure around the Jigokudani valley, Tateyama volcano, Japan, inferred from AMT

SEKI, Kaori[1*] ; KANDA, Wataru[2] ; OGAWA, Yasuo[2] ; HASE, Hideaki[2] ; HINO, Yuta[1] ; KOBAYASHI, Tomokazu[3] ; TANBO, Toshiya[4]

[1]Department of Earth and Planetary Sciences , Tokyo Institute of Technology, [2]Volcanic Fluid Research Center, Tokyo Institute of Technology, [3]Geospatial Information Authority of Japan, [4]Tateyama Caldera and Sabo Museum

Midagahara (Tateyama volcano) is situated in the northern part of the Japan Alps, and fumarolic activity occurs in the Jigokudani valley located in the northeast end of the Midagahara Plateau. Jigokudani valley was formed by the periodically repeated vapor explosions. Increase in volcanic activity is a great concern because of recent events such as a sulfur outflow, a composition change of the fumarolic gases and the emergence of high temperature fumaroles. We investigated the distribution of hydrothermal fluid and gas reservoir beneath Jigokudani using the AMT method to image the 2D resistivity structure and checked the position of fumaroles. In this observation, the AMT sites were installed along the ENE-SWS survey line around the Jigokudani Valley. The final model revealed that there is a conductive body beneath the Jigokudani valley, and that a relatively low resistive body extends through between the high resistivities beneath the conductor. Near-surface conductor is divided into slightly conductive upper part and lower part. The upper part is explained by clay sediments and hydrothermal fluids. The lower part indicates the presence of gases and fluids. Because of clay's impermeability, the upper clay sediments play the role as a cap for gases. The deep resistive layer is estimated to be the basement of granites that are widely exposed around the Jigokudani valley. We inferred that the relativity conductive body separating these granites is a path of the magmatic gases. The most active fumarole in the Jigokudani valley is on extension of this path.