

Two-dimensional magnetotelluric modelling of Kusatsu-Shirane Volcano

S. Bulent Tank[1], Yasuo Ogawa[2], Yoshimori Honkura[3], Masaki Matsushima[4], Jun-ichi Hirabayashi[5]

[1] Earth and Planetary Sci., Titech, [2] TITECH, VFRC, [3] Earth and Planetary Sci., Tokyo Institute of Technology, [4] Dept. Earth Planet. Sci., Tokyo Inst. Tech., [5] VFRC, Tokyo Inst. Tech.

We performed wideband magnetotelluric measurements in order to investigate the deep resistivity structure of the Kusatsu-Shirane Volcano, Gunma, Japan. Kusatsu-Shirane is one of the active quaternary volcanos that are chained in the central Honshu. MT is preferred as a method for investigating the crustal structure of the volcano, because it is an efficient method for detecting the presence of fluid in a media by monitoring the resistivity.

Two-dimensional inversions were performed in six profiles, having 3 magnetotelluric and 41 telluric only sites, by using the code developed by Ogawa and Uchida (1996) on ABIC criterion. The frequency range for the inversions is between 85 Hz and 0.005 Hz, which is enough to resolve upper-crust structures. Early results show that there is a shallow conductor above the very resistive basement. The resistivity (10000 Ohmm) is high on the eastern part of the profiles. The seismicity (N-type earthquakes) of the area shows that the micro-earthquakes occur on the edge of the resistive basement.