

Preliminary report of wide band MT survey in the summit area of Mt. Asama, Japan

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We conducted MT and AMT surveys in the summit area of Mt. Asama in September 2012 in order to elucidate the shallow structure beneath the crater summit including its conduit. The electromagnetic measurements were performed at 27 sites, the spacing of which is as short as about several hundred meters to detect the highly resolved structure.

The AMT measurements were conducted at all the 27 sites for several hours, and MT measurements were conducted at 9 sites for several days. The five-component MT and AMT data were collected using the Phoenix MTU system and the Metronix ADU system. However only telluric measurments were carried out at some sites because the summit area is very rocky and the surface is too hard to dig halls and install large magnetic sensors.

By estimating MT impedance tensors at some sites, the following facts were found:

- 1) At higher frequency as several hundred Hz, the sites at eastern side of the crater show low apparent resistivity as several ohm-m, while other sites show higher apparent resistivity beyond 100 ohm-m.
- 2) Low resistivity parts move to the center of the summit at middle range of frequency as 1 Hz, although the data error is relatively large due to the dead band of the EM source.
- 3) The center and western parts of the summit show the low apparent resistivity at lower frequency as 0.01 Hz.

The preliminary results will be shown in this presentation.

Keywords: Mt. Asama, MT survey, apparent resistivity