

Resistivity survey of Asama Volcano by Magnetotellurics, an analysis of the NE-SW line, western summit area

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We conducted electromagnetic field experiments in Asama Volcano from July through October, 2005. The surveys were carried out with the cooperation of several universities under the 7th volcano eruption prediction program. Participants and their affiliations are listed at the end. The following surveys were performed in three different periods.

Jul. 12-15, 2005: 1st survey (TITEC and Tokyo) Audio-band Magnetotellurics in the piedmont

Sep. 11-21, 2005: 2nd survey (Hokkaido, TITEC, Tokyo, Kyoto) Wide-band magnetotellurics along Cherry Park Line

Oct. 10-15, 2005: 3rd survey (Hokkaido, Tohoku, AIST, TITEC, Tokyo, Kyoto) Helicopter-borne magnetic survey, Wide-band and Audio-band magnetotellurics (EW and NE-SW lines)

Ogawa et al. (2005) investigated the data set obtained in the 2nd survey along the Cherry Park Line, which runs almost north to south in the western part of the volcano. They preliminarily reported a conductive body beneath the EW trending central ridge where a dyke intrusion is inferred from GPS measurements (Aoki et al., 2005). The present paper mainly deals with the AMT data set obtained in the 3rd survey. The survey line trends nearly parallel to the first one but lies about 2 km closer to the summit. Induction vectors at 10 Hz concentrate toward the summit area, implying that the conductive body suggested by Ogawa et al. (2005) extends to at least the western part of the summit area. In contrast, the arrows in a frequency range below 1 Hz generally direct to NNE, suggesting the greater depth of the regional basement in the northern part of the volcano.

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