

## Self-potential anomalies around the earthquake swarm area in the southeastern foot of Ontake volcano

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Earthquake swarm activity has been continuously observed around the southeastern flank of Mt. Ontake since 1976. A phreatic explosion occurred in 1979 at a fissure on the southwestern slope of the Kengamine, the main peak of Mt. Ontake. And a large earthquake with the depth about 2 km and a magnitude of 6.8 occurred in 1984 in the southeastern flank of the volcano. Recently, Kimata et al. (2004) revealed uplift ground deformation above the earthquake swarm area by using repeated leveling. Furthermore, Magnetotelluric soundings estimated a low resistivity region with the depth about 2km beneath the uplift area [Kasaya et al., 2002].

In order to investigate a relationship between tectonic movements and subsurface low resistivity zone, we carried out self-potential(SP) measurements from 2003 and 2006 around the earthquake swarm area in the southeastern foot of Ontake volcano.

A torus-shape positive SP anomaly have been detected at the southeastern part of survey profile. This anomaly is located between recent active clusters of earthquakes and near the ground uplift detected by Kimata et al. [2004]. They suggest that the uplift is associated with a region of low resistivity [Kasaya et al. 2002] and anomalous increases in chemical compositions of springs [Tanaka et al. 2003], imaging potential shallow hydrothermal activity. Generally, an upflow caused by a hydrothermal convection produces positive current sources in the direction of flow. The comprehensive positive sense anomaly supports potential shallow hydrothermal activity.

In this presentation, we will report a detail of SP results and outline of continuous SP observation network for monitoring.