

Geophysical investigations for hydrothermal system of Ungaran Volcano, Central Java, Indonesia

Yasuhiro Fujimitsu[1]; Koichiro Fukuoka[1]; Sachio Ehara[1]; Jun Nishijima[1]

[1] Earth Resources Eng., Kyushu Univ.

<http://geothermics.mine.kyushu-u.ac.jp/>

There are some geothermal manifestations at the piedmont of Ungaran Volcano, Central Java, Indonesia. Previous researches on the geothermal system of this volcano had not been carried out, therefore we have been conducting some kinds of investigations for the hydrothermal system of this volcano with Gadjah Mada University in Indonesia since 2004.

We conducted heat discharge estimations by using infrared imagery and SP surveys at the Gedongsongo fumarolic area on the southern mountainside of Ungaran Volcano in 2004, and constructed a conceptual model of the hydrothermal system for the area, which describes that a part of ascending geothermal fluid from the deeper part of Ungaran Volcano changes to a lateral flow, reaches to the ground surface and forms the Gedongsongo fumarolic area.

In 2005, we conducted the infrared imagery and SP surveys again and the tripartite seismic observation at the same area. The Gadjah Mada University team had tried the seismic observation at this area in 2004, but no seismic data had not been obtained during the 3 days observation. However, we observed active seismicity that includes 4 swarms for 5 days in 2005. Almost all of the S-P times of the observed seismic data were not longer than 0.5 second, so we inferred that these earthquakes occurred just beneath Ungaran Volcano.