

Repeated aeromagnetic survey on Sakurajima Volcano(2007-2011)

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To detect the temporally change of the magnetic field associated with the volcanic activities on Sakurajima volcano, we made helicopter-borne aeromagnetic survey around Sakurajima volcano on Oct. 24-26, 2011. The survey was conducted on 22 N-E lines(2-8km) and 15 E-W(5-12km) lines inside the Sakurajima island. The spacing of each lines is about 500m, the Ititude of flight is about 150-200m from the ground.

The total flight time was about 6 hours. On this volcano, dense aeromagnetic survey was made on Nov. 2007. Using this data as a reference field, we tried to detect the temporally change during 2007-2011. On this analysis, we applied the equivalent anomaly method to calculate the upward continuation of the observed geomagnetic field (Nakatsuka and Okuma, 2002). As the result, a remarkable dipoler temporally change was detected around eastern part of Sakurajima volcano. On this area, active volcanic eruptions occurred in a new crater, Showa-crater, repeatedly. It is possible that the temporally magnetic field change detected in this area is related with the activities of the Showa crater.

Keywords: aeromagnetic survey, magnetic anomaly, temporally change of geomagnetic field