

Self-potential measurement in Satsuma-Iwojima

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Satsuma-Iwojima is located in the northwestern margin of Kikai Caldera which erupted about 6300 years before. Self-potential observation was aimed to reveal the hydrothermal system beneath Satsuma-Iwojima volcano. Positive self-potential anomaly around the summit crater and negative ones at the foot of the volcano were observed. They can be interpreted as electrokinetic potentials associated with the ascending and descending flows of hydrothermal convection, respectively. High potential gradients observed around 300m a.s.l. may be caused by the geological difference. Comparing other volcanoes, it is characteristic that magnitude of the positive anomaly is relatively small. This may be caused by high temperature steam and altered minerals distributed around the summit crater.