

Electric self-potential around Teide Volcano, Canary Islands

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Mt. Teide, in Tenerife, Canary Islands, is a stratovolcano (3718m above sea level). It is located inside Canadas caldera (16x9 km in size). The most intensive fumarolic activity occurs inside the summit crater and weak fumaroles also persist on the flanks of the summit cone. In 2003, we made surveys of electric self-potential (SP) and diffuse emission of volcanic gas around Teide volcano. In this paper we mainly report the first results of SP survey.

In the crater of the summit cone, positive anomalies of over 300 mV in SP were observed. The SP anomalies in the crater well correspond to the distribution of high-temperature anomalies. Positive anomalies were also found at fumarole areas on the flank.

The characteristic of the result of SP measurement on the long way to east through Mt. Blanca for about 4 km is the large anomaly extended as far as 3 km from the summit crater. The amplitude of SP variation was about 600 mV. This suggests strong hydrothermal activity beneath Mt. Teide.

Apparent resistivity was measured at several points around Mt. Teide by Wenner survey. The resistivity was as high as about 10 k ohm m except for the points in the crater and the fumarole areas where the value was as low as 100 ohm m.