

Investigations for the hydrothermal system of the Yumugi area in the Kuchinoerabujima volcano

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The Kuchinoerabujima volcano forms Kuchinoerabujima Island, Kagoshima Prefecture, which is located west of Yakushima Island, and is the andesitic volcanoes which include an active volcano, Shin-dake. Development of hydrothermal system is inferred because there are some hot springs in the island. The plan of binary cycle power generation by using the hot springs is in process, and according to the results of the former research and investigation, the Yumugi area is a geothermal prospect area. Following these investigation results, the authors had conducted gravity surveys, soil carbon dioxide concentration measurements, 1m-depth ground temperature measurements at the Yumugi area, and estimated heat discharge rate from Shin-dake in August 2011. And we constructed a conceptual model of the hydrothermal system of the Kuchinoerabujima volcano, mainly in the Yumugi area.

Keywords: Kuchinoerabujima, gravity, soil carbon dioxide concentration, ground temperature, heat discharge rate