

Gravity changes inferred from hydrothermal simulation before and after the 1995 eruption in Kuju volcano, Oita prefecture

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The phreatic eruptions were occurred on October and December 1995, at Kuju Iwoyama, Oita prefecture, Japan. Several hydrothermal models were calculated using Hydrotherm ver. 2.2 (Hayba and Ingebritsen, 1994). The temperature of the fumaroles and heat discharge rate were used for a matching parameter on these models. These models can interpret the hydrothermal flows change before and after the eruption. The steep gravity decreases up to 100 μ gal and gradual gravity recovery up to 110 μ gal were detected after the eruption by micro-gravity monitoring in Kuju volcano. This result interpreted the mass changes in the geothermal reservoir around the conduit in the Kuju Iwoyama. The objective of this study is to construct a hydrothermal model to satisfy the heat discharge rate and gravity changes for the improvement of the previous hydrothermal model. The numerical modeling is conducted using Hydrotherm ver. 3.2 (Kipp Jr. et al., 2008). This presentation reports the results of the hydrothermal modeling.

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