

Unspiked K-Ar dating for the central part of Kuju volcano, Kyushu, Japan

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Unspiked K-Ar dating method enables mass fractionation correction of initial $^{40}\text{Ar}/^{36}\text{Ar}$ ratio, and has been successfully applied to young lava samples, especially younger than 0.5 Ma. We measured unspiked K-Ar ages for lava samples corrected from Ogigahana, Nakadake, Mimatayama volcanoes, the central part of Kuju volcano, Kyushu, Japan. The volcanic bodies in central Kuju volcano are regarded to have formed after Handa pyrocrastic flow eruption in ca. 54 ka. However, the detailed geochronological study had not been conducted because their ages are considered to be younger than the measurement limit by conventional K-Ar dating method.

New ages for the lava on south Ogigahana Volcano is 34 ± 3 (1σ) ka, agree with the reported TL ages (34-37 ka; Okuno et al., 2013) and the stratigraphy. The sample from the lower unit yield 65 ± 8 ka, similar age with the TL ages for the summit of the volcano and adjacent Iwaigodake volcano (60-70 ka; Okuno et al., 2013).

The age for the lava from Inaboshi Yama, a part of Nakadake volcano, is 46 ± 12 ka, showing it formed soon after Handa pyrocrastic flow eruption.

We measured also the essential rock in Matsunodai Debris Abaranche Deposit, probably originated from Mimatayama volcano. The obtained age is 36 ± 12 ka, in agreement with the ^{14}C age of ca. 20ka in its error.

These results show that a several volcanic bodies were formed in ca.54-30 ka in the central part of Kuju volcano.

Keywords: Kuju volcano, K-Ar dating, Unspiked method