K-Ar dating of polygenetic and monogenetic volcanoes in the eastern Izu area

Ayako Matsumura [1], Masafumi Sudo [2], Takahiro Tagami [3]

[1] Earth and Planetary Sci., Kyoto Univ, [2] IHS, Kyoto Univ., [3] Earth and Planetary Sci., Kyoto Univ.

There are Quaternary polygenetic volcanoes and independent monogenetic volcano group in the eastern area of Izu Peninsula. Eruptive history of these volcanoes was studied by using palaeomagnetism and tephrochronology, suggesting that the polygenetic volcanoes ended eruption by ~0.3 Ma, and monogenetic volcanoes started eruption at ~0.15 Ma. We carried out K-Ar dating of lavas from both polygenetic and monogenetic volcanoes in the area, by using the peak comparison method and mass fractionation correction procedure. We revealed that eruptions of polygenetic volcanoes continued until ~0.21 Ma and there is no significant time lag between the oldest monogenetic volcano and the youngest polygenetic volcano. It is therefore likely that the former is a flank volcano of the latter.

There are Quaternary polygenetic volcanoes and independent monogenetic volcano group in the eastern area of Izu Peninsula, the northern edge of the Izu-Bonin arc colliding with the Japan arc. Eruptive history of these volcanoes was studied by using palaeomagnetism and tephrochronology, suggesting that the polygenetic volcanoes ended eruption by ~0.3 Ma, and monogenetic volcanoes started eruption at ~0.15 Ma. To determine the time when the mode of volcanic activities changed, we carried out K-Ar dating of lavas from both polygenetic and monogenetic volcanoes in the area, by using the peak comparison method and mass fractionation correction procedure. We revealed that eruptions of polygenetic volcanoes continued until ~0.21 Ma and there is no significant time lag between the oldest monogenetic volcano and the youngest polygenetic volcano. It is therefore likely that the former is a flank volcano of the latter.