

SVC062-02

Room: 201B

Time: May 23 09:15-09:30

Geology and Petrology of Quaternary Tomie Volcano, and Kuroshima, Ooshima and Akashima Volcanoes of Onidake VG

Takashi Nagao^{1*}, Akira Sato¹, Kana Takamoto², Keiko Ishige², Yoshikyuki Horikawa¹, Tomonori Horie²

¹Yamaguchi University, ²Yamaguchi University

Quaternary Onidake volcano group, Kisyuku volcano, Miiraku volcanoes and Tomie Volcano are distributed on Fukue Island, Nagasaki Prefecture, SW Japan.

Tomie volcano is a small monogenetic shield volcano consisting of pahoehoe lavas. Kuroshima, Ooshima and Akashima volcanoes are located to the south of Fukue Island and belong to Onidake volcano group. These volcanoes compose of thick piles of pahoehoe lavas and parastic cones.

Kuroshima basalt, and Akashima, Ooshima and Tomie basalts are alkalic and tholeiitic series respectively, based on total alkali contents of MacDonld and Ktsura(1964). On Na₂O+K₂O-SiO₂ diagram, alkalinity decreases from Kuroshima through Akashima and Ooshima to Tomie basalts. These basalts have with-in plate basalt signature. Although concentration of incompatible elements differ between Kuroshima, and Akashima, Ooshima and Tomie basalts, the element patterns in N-MORB normalized trace element variation diagrams are broadly identical.

On the basis of Fo-Cr# relationships of Kuroshima, Ooshima and Tomie basalts and olivine-spinel mantle array. Kuroshima and Tomie basalts suggest lherzolithic and harzburgitic restites respectively. Ooshima basalt is transitional peridotite from lherzolite to karzburgite. This suggests two possibilities of magma genesis for these basalts. One is each basalts are derived from distinct mantle peridotites. Another is each basalts are produced by differnt degree of partial melting of lherzolite mantle.

Keywords: Tomie Volcano, Onidake Volcano Group, pahoehoe, within-plate basalt