

## Magma plumbing system of the pre-caldera volcanism: From the lithic fragments in pyroclastic flows, Shiobara Caldera

TSURUMAKI, Kensuke<sup>1\*</sup>

<sup>1</sup>Geography, Meiji Univ.

Three Middle pleistocene pyroclastic flow deposits (Otawara pyroclastic flows) erupted from Shiobara caldera, consist of KN-pfl, KT-pfl (0.6Ma) and TN-pfl (0.3Ma) located in the north foot of the Takahara volcano, and distributed mainly on the southeastern side. KN-pfl and TN-pfl contain a lithic fragment concentration zone (LCZ), so this study investigated whole rock major and trace element compositions analyzed by XRF are reported from lithic fragments in LCZ of KN-pfl and TN-pfl. This study used fresh samples and analyzed each 40-50 samples at random. The results of analysis data compared with 288 samples of Takahara volcanics.

As a result, all of lithic fragments are similar to tholeiitic rocks of Takahara volcanics, be considered accessory rocks. In addition, most lithic fragments in LCZ of KN-pfl resembles that basalt-andesite rocks distributed east and south side of Takahara volcano. In contrast, many lithic fragments in LCZ of TN-pfl are undiscovered dacite rocks in this area. In Harker diagrams,  $K_2O$  content become two trends suggested the different processes of magma genesis.

Considering these characteristics of chemical compositions about lithic fragments in LCZ, two types of tholeiitic basalt-andesite magma activity were until 0.6Ma, and KN-pfl and KT-pfl erupted by two types of felsic magma activity, then the caldera was formed. The tholeiitic dacite-rhyolite magma fed at 0.6Ma to 0.3Ma, and the caldera forming or expanding eruption by TN-pfl. Since 0.3Ma, the magma plumbing system of Takahara volcano has extremely changed. Then calc-alkaline magma activity built post-caldera stratovolcano.

Keywords: Volcanic history, Magma plumbing system, Caldera, Pyroclastic flow, Lithic concentration zone, Whole rock composition