

## Magma plumbing system of Akanfuji in the Me-akan volcano, eastern Hokkaido, Japan

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Akanfuji, situated in the Me-akan volcano of Eastern Hokkaido, started its eruption ca. 2.1 ka, and its activity continued for 1,100 years. During this period, 17 eruption deposits (Akf-1-Akf-17) can be discerned. The mode of the eruptions of this volcano was mainly of the scoriaceous sub-plinian type. Lava flows are often associated with the scoria eruption. The eruption history of Akanfuji is divided into five stages. In the first stage (Akf-1), scoria fall with many lithic fragments was deposited from northeast to east of the volcano. In the second stage (Akf-2-Akf-3), two larger eruptions occurred and coarse scoria falls were deposited to the northeast. In the third stage (Akf-4-Akf-13), some eruptions occurred and the scoria falls were dispersed in a northeast to southeast direction. This stage is characterized by the finding of orthopyroxene in the deposits. In the forth stage (Akf-14-Akf-16), three larger eruptions occurred and voluminous scoriae were deposited to northeast (Akf-14) and from southeast to south (Akf-15-Akf-16). In the final stage (Akf-17), fine scoria fall was deposited from northeast to southeast. Akanfuji had erupted basalts through its history. Two types of basalts (types I and II) are recognized on the basis of phenocrysts assemblage. Type I is orthopyroxene (opx) bearing olivine (ol)-crynopyroxene (cpx) basalt and Type II is cpx bearing ol-opx basalt. In the second stage, type I erupted, while in the stage 3, type II erupted. In the stages 4 and 5, the ejecta returned to the type I. Both types show mineralogical evidences of magma mixing, which are reaction products such as cpx overgrowth around opx phenocrysts, wide range of core compositions, and coexistence of normaly and reversely zoned plagioclase, olivine, and pyroxenes. We estimate the presence of A magma (cpx-rich) and B magma (opx-rich) and the types I and II are formed according to the degree of mixing of the A and B magmas.

Keywords: Akanfuji, Me-akan volcano, Magma plumbing system