

Analysis of the Fuji 1707 tephra -Stratigraphic transition of grain size distributions and vesicle textures-

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Analyzing the vesicle texture of pyroclast, we can recognize a mechanism of the explosive eruption. Although many studies focus into vesicle textures, it is not to pursue the change of vesicle textures accompanying transition of an eruption. In this study, we analyzed grain size distributions and vesicle size distributions of the Fuji 1707 tephra, which was researched in detail for the stratigraphy and the paleogeography. The pyroclast compose of four layers (Ho-1, Ho-2, Ho-3, Ho-4). Ho-1 and Ho-2 contain banded pumice/scoria. Ho-3 and Ho-4 consist of homogeneous basalt. The grain size (Md phi and Max phi) decrease flatly accompanying transition of the

eruption. The degree of vesiculation and the number density of vesicles decrease from Ho-1 to Ho-2 and increase from Ho-2 to Ho-3. Based on these results, we estimate the magma system of the Fuji 1707 eruption. Just before the eruption, the stratified magma batch (composed of the dacite magma and the andesite magma) and the basalt magma batch existed under the Fuji volcano. Initially the former batch spurted out mingling heterogeneously, in turn the latter batch erupted explosively to rapid decompression by connecting a vent.