

# Petrological study of borehole core at western edge of Fuji volcano

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## Introduction

Previous studies reported petrological data for borehole core at northeast, northwest, and south flanks of Fuji Volcano (e.g., Togashi et al., 1997; Kaneko et al., 2002; Yoshimoto et al., 2003). Based on the borehole data, evolution history of the volcano has been unveiled. However, there is no data for borehole at west flank. Thus, we report petrographical and whole-rock data of borehole core drilled at western edge of the Fuji volcano.

## Previous works

Geological studies have reported that Fuji volcano is composed of three cones: Komitake, Older Fuji, and Younger Fuji volcanoes, in order of decreasing age (e.g., Tsuya, 1968). Geochemical studies have shown that whole rock compositions were powerful tool to discriminate the three volcanoes (e.g., Takahashi et al., 1991; Togashi et al., 1997); the Older Fuji lavas (from 60,000 y. B.P.) have lower TiO<sub>2</sub> content and lower Zr/Y compared with the Younger Fuji lavas, SiO<sub>2</sub> content of the Komitake lavas are distinctly higher (more than 53 wt %) than those of the other two volcanoes. Recent studies have reported that the Komitake lavas are andesitic (SiO<sub>2</sub>=53-61 wt %; e.g., Yoshimoto et al., 2003).

## Description of the borehole core

The drilling position is located in Shibakawa-cho and height of 200m above sea level. The volcanic sequence was cored from 8 to 102m beneath the surface. Based on the volcanic succession, the sequence has been divided into two units, upper lava flows (0-28m) and lower tuff breccia (28-102m). The lava flows are called the SW1 that was erupted at the earliest stage of the Younger Fuji Volcano. Phenocryst phases of the lavas are olivine, plagioclase, clinopyroxene, and orthopyroxene. Volcanic rocks cored at 46, 51, 81, and 88m beneath the surface are andesite (SiO<sub>2</sub> = 57-62 wt %) and have phenocrysts of plagioclase, clinopyroxene, and hornblende. The andesitic rocks are different from the Komitake andesite because incompatible element contents of the andesitic rocks are distinctly higher than those of the Komitake andesite. We also cored the Older Fuji lavas from 70 and 101m beneath the surface.