古地磁気学的手法を用いた富士火山，宝永山の形成過程の解明
On the formation process of the Mt.Hoei, Fuji volcano. A scenario based on the emplacement temperature inferred from paleomagnetic method.

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Mt. Hoei (Hoei-san) is located at the southeastern flank of Fuji volcano, and composed mostly of angular rock-fragments which are quite different in petrographic features from the coeval basaltic ejecta of 1707 A.D (Tsuya,1955). It's edifice was formed by a single eruption, the Hoei eruption, according to historical literatures documenting the eruption (e.g. Miyaji and Koyama, 2007). Miyaji et al.,(2011) classified 17 units of the Hoei eruption into 3 stage on the basis of the patterns of the eruptive pulses, and proposed that Mt. Hoei was formed by lateral intrusion of degassed basaltic magma in stage 2. However, detailed geological study of the Mt. Hoei has not been made after Tsuya(1955). Here we report paleomagnetic results of volcanic ejecta of the Mt. Hoei.

Samples for paleomagnetic measurements were collected from 3 sites, the spatter cone in the 1st crater, the ridge of Mt. Hoei and the erosion valley of Gotenniwa. They were oriented by a sun compass to eliminate the influence of local magnetic anomalies. At each site, we collected 20 to 24 samples using an engine powered core picker. Samples were measured using a spinner magnetometer, and were subjected to progressive alternating field (AFD) and thermal demagnetization (ThD).

The mean magnetic directions of each sites show remarkably unanimous. They agree with the eruption age of 1707 A.D., based on similarity to the paleomagnetic secular variation model (JRFM2K.1). The results of ThD indicate that the magnetic minerals are titanomagnetite as the highest blocking temperature is 500-580 degrees C. In the erosion valley of Gotenniwa, the NRM of the accessory materials have high and low temperature components bounded at 340 degrees C or more. It is clear that the low temperature component coincides with the directions of the essential materials of Hoei eruption, so that it was heated by the eruption and cooled after the emplacement. Furthermore, some of the accessory materials in the ridge of Mt. Hoei show magnetic directions different from those of the spatters, so that it was not or weak heated. Mt. Hoei is composed not only abundant various accessory materials but also spatters and pyroclastic deposits of the Hoei basalt which can be corelated to the Ho-Ⅲ tephra (Miyaji et al.,2011) by petrography. Our findings suggest that paleomagnetic method can clarify the simultaneity of volcanic ejecta, and the Mt. Hoei was rapidly formed by ultraproximal fall or surge deposits of the Hoei eruption in 1707 A.D.

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