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Fissure eruptions of Fuji Volcano during the last 2300 years: Eruptive fissure and style of Eruption

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Fuji Volcano, central Japan, caused various fissure eruptions during the last 2300 years. The volcano is a good example to understand both the effect of regional and local stress field, and the effect of explosivity. Both explosive eruptions and un-explosive ones occurred at fissure eruptions with a short eruptive fissure of less than a few km long. The examples for explosive eruptions are Obuchi scoria and Hoei eruption. On the other hand, long-fissure eruptions come from un-explosive eruptions. Especially, their explosivity tends to decrease toward the lower termination. Some un-explosive eruptions may have been originated form magma drain-back system near the summit. The model is supported by the evidece of the high-level fissure eruption sites just beneath the summit crater bottom, and the existence of fumarole activities which were reported by historical documents. We examine the analog experiments on gelatin to collaborate the stress effect with the explosive effect with vesiculation.

Keywords: Fuji Volcano, Magma plumbing System, Fissure eruption, Style of eruption, Drain back, Stress field