

Approach by volcanic observation for dynamics of volcanic phenomena

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Dynamics of volcanic activity has been revealed by various kinds of observation. Inflation of volcanic body prior to eruptions corresponds to intrusion of magma to the underground of volcanoes and deflation is accompanied by eruptive activity.

Prior to vulcanian eruptions, minor deflation is detected. This corresponds to leakage of volcanic gas from a gas pocket formed at the uppermost conduit. The minor deflation reflecting minor pressure decrease induces a sudden degassing in oversaturated magma. The sudden degassing corresponds to a volume increase at a deep part in the conduit, as revealed by outward first motions of explosion earthquakes. The volume increase attained at the top of the conduit and the gas pocket overbursts. As the results of collapse of the gas pocket, infrasound of air-shock type is generated with ejection of incandescent bombs followed by ejection of volcanic ash.

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