

Simulation of debris flow related to volcanic eruption using Cocoa powder and Sponge cakes

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<http://www.nilim.go.jp/lab/rbg/index.htm>

Generation of Debris flow during or after eruption is one of the unclear phenomena of the volcanic disasters. It is important to understand the mechanism of volcanic disaster not only education but also volcanic mitigation.

We developed the simulation method of the debris flow accompanied with volcanic eruption using the Cocoa powder and Sponge cake to visual explanation to kids. In this simulation, Cocoa powder is assumed as ash fall, and the ground surface is expressed by the sponge cake. Rainfall is also expressed by milk and the intensity of rainfall controlled by spray. The slope angles of the sponge cake set as 10 degree or more. And chocolate decoration set along the channel to express the fallen trees.

The rain of milk is generated to the ground surface of the sponge cake without cocoa powder volcanic ashes has not deposited. The ground of sponge cake absorbs milk and it not caused the debris flow. However, the deposition of cocoa powder ash fall using by tea strainer, debris flow can be observed during milk rainfall.

This simulation is so easy express the mechanism of the debris flow caused by the eruption.

We carried out this simulation at 2005 kid school at The Kirishima volcano, and an experiment is successful.