

## Geological implication of the lahar disaster by Typhoon Wipha on October 16, 2013 in Izu Oshima Volcano

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Heavy rain (over 800mm per 24 hours) triggered by Typhoon Wipha on October 16, 2013, caused many slope failures and associated lahars in the western part of Izu Oshima Volcano, Japan. Tephrostratigraphic study revealed a mechanism of the slope failures and history of similar lahars for the past 700 years. Seven fallout ash or scoria layers, which were ejected during the 7 eruptions since the early 14th century, are distributed in the study area. These tephra layers are interbedded with eolian dust (loess) layers, each of which was deposited during a 10-200 years dormant period. Stratigraphic horizons of the slope failures concentrated at the boundaries between ashes and underlying loess layers. This means that more permeable ash layers were saturated with rainwater and slid down along the upper surface of less permeable loess layers. We newly found that three lahars (Lahar A, B, and C) occurred in historic time. Lahar A and B are correlated to the disaster documents of 1856 (or 1932) and of the late 16th century, respectively. Lahar C overlies directly on the Y5.2 scoria and associated Motomachi Lava and thus occurred in the early-middle 14th century.

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