

## 2015-16 year's active of Niigata-Yakeyama volcano -seismic activity, volcanic deformation and plume data-

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Niigata-Yakeyama volcano is a small stratovolcano located in the western part of Niigata Prefecture, Japan. Last magmatic eruption occurred in 1773. Recently, Niigata-Yakeyama repeatedly erupt small phreatic eruptions. Japan Meteorological Agency (JMA) has been monitoring the volcanic activity of Niigata-Yakeyama. In 2015-2016, the activity of Niigata-Yakeyama became active. In this paper, we report the seismic activity, ground deformation plume data observed by JMA.

The height of volcanic plume became high since 2015 summer. Ash fall was observed by on-board observation on April and May 2016 (Oikawa et al., 2017, JpGU). By using the plume-rise method, we estimated the heat radiation rate. As a result, it was revealed that the heat radiation rate at Niigata-Yakeyama was increased from May 2016.

The volcano-seismic activity was increased since 2015. The number of volcanic earthquakes rapidly increased from May 1 to 4. The maximum number of volcanic earthquakes per day was 25 on May 1. After that, the number of volcanic earthquakes gradually decreased.

The volcanic deformation was observed by tilt meters and GNSS. The baseline length between Udana and Maruyamajiri extended from January to August, 2016. SAR Interferometry analysis by using ALOS-2/PALSAR-2 data also detected the ground deformation considered as the inflation of Niigata-Yakeyama (Kamata et al., 2016, VSJ). These volcanic deformation data was explained by the pressure source located at the depth of 4-5 kilometers below the summit area of Niigata-Yakeyama volcano and with the volume expansion of  $4.9\text{-}5.7 \times 10^6 \text{ m}^3$ .

These observation data were considered to indicate the intrusion of magma and the activation of hydrothermal activity at shallow part of Niigata-Yakeyama. JMA expanded the observation network for volcanic activity at Niigata-Yakeyama volcano. Two video cameras and one broadband seismometer were installed. JMA continues to monitor Niigata-Yakeyama volcano.

Keywords: Niigata-Yakeyama, seismic activity, volcanic deformation, plume