

# Seismic activity beneath the Hakusan Volcano in October and November 2017

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The latest eruption of the Hakusan volcano occurred in 1659. The Hakusan volcano may have a possibility to erupt in near future based on the past activities from tephra stratigraphy and historical records (Moriya, 2000). Beneath the Hakusan volcano, we have observed swarm activities with more than 100 events/day and the largest event of Mj 4.5 for recent 40 years were observed in 2005. We report here recent seismic activities in October and November 2017 beneath the Hakusan volcano.

In general, a daily number of earthquakes is less than a few beneath the Hakusan volcano. However, from the data of JMA, 42 events on 17th March, 48 events on 20th April, 118 events on 10th October and 370 events on 26th November occurred in 2017. The hypocenters of events in October and November, determined by using WIN system (Urabe and Tsukada, 1992), are located 0.5–1.0 km off west from the summit of Hakusan (Gozenamine) and at the depth of 0–2.0 km. These source locations are coincident with ordinary ones. A detailed comparison of the hypocenters reveals that the source depths of November events are shallower than those of October events. The largest event occurred at 5:06 29th November (JST). We use here the velocity structure of Takeuchi (1978) and the formula of magnitude of Watanabe (1971).

For larger events, we estimate fault plane solutions using the polarity of P-waves. All events show strike-slip or reverse fault types with the compression axes of E-W to NW-SE. We observe no volcanic tremors and low frequency events through the analysis period.

The swarm seismic activities in October and November 2017 seem to belong to an ordinary activity in terms of hypocenter, magnitude and focal mechanism. However, seismicity beneath the Hakusan volcano seems to increase in a time scale of 1–2 years or 10 years.

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Keywords: Swarm earthquakes, Focal mechanism