Temporary dense seismic observation in Hachijojima Island

*Ryotaro Kanemaru¹, Yoshiya Oda¹, Hiroyuki Azuma¹, Kentaro Omori¹, Syotaro Kanke¹, Toshiki Watanabe²

1. Tokyo Metropolitan University, 2. Earthquake and Volcano Research Center Graduate School of Environmental Studies, Nagoya University

There are 111 active volcanoes in Japan and 50 of them are continuously monitored for volcanic disaster prevention. Hachijojima Island is one of the 50 monitored volcanoes. There was no record of eruption after the eruption in 1605, and the volcanic activity was calm. However, a dike intrusion was estimated beneath Nishiyama in Hachijojima Island during the 2002 earthquake swarm (Kimata et al., 2004). From the above background, Tokyo Metropolitan University is engaged in imaging of volcanic structure beneath Hachijojima Island as part of research project on volcanic disaster mitigation. Temporary dense seismic observation was performed to obtain volcanic structure with enough resolution. We have installed 45 seismographs in Hachijojima Island, mainly around Nishiyama, and 1 seismograph in Hachijokojima. Total number of seismic stations was 46. The observation period was approximately seven months from September 2019 to March 2020. The seismometer we used was a 1 Hz velocity type seismograph (LE-3DLite MkIII) and off-line type data recorder (GSX) for continuous recording at a sampling frequency of 250 Hz.

By this Temporary observation, in addition to earthquakes listed in JMA hypocenter bulletin, it was possible to detect earthquakes that could not be determined from the conventional seismic network. In this paper, we introduce the outline of the temporary dense seismic observation and preliminary results of the hypocenter determination.

Reference

Fumiaki Kimata, Meilano Irwan and Keita Fukano (2004) Ground Deformation at Hachijo Island, Japan on 1322 August 2002 Observed by GPS Measurements and Estimated Dike Intrusion Model. Volcano, 49, 13-22.

Keywords: Hachijojima Island, Temporary dense seismic observation, hypocenter distribution