

## Deformation of Miyakejima volcano measured by GNSS campaign observation (2013-2015)

\*Haruna Watanabe<sup>1</sup>, Takeshi Matsushima<sup>2</sup>, Miyo Fukui, Atsushi Watanabe<sup>3</sup>, Jun Oikawa<sup>3</sup>, Takashi OKUDA<sup>4</sup>, Taku Ozawa<sup>5</sup>, Yosuke Miyagi<sup>5</sup>

1. Department of Earth and Planetary Sciences, Graduate School of Science, Kyushu University, 2. Institute of Seismology and Volcanology, Faculty of Sciences, Kyushu University, 3. Earthquake Research Institute, University of Tokyo, 4. Earthquake and Volcanology Research Center, 5. National Research Institute for Earth Science and Disaster Resilience

Miyakejima is an active volcano located about 180 km south of Tokyo, and since the 20th century it erupted at intervals of about 20 years (1940, 1962, 1983, and 2000). Fukui et al. (2015) conducted GNSS campaign observations and estimated the pressure source of Miyakejima from 2011 to 2013. Therefore, in this research, we estimated the crustal deformation of Miyakejima from 2013 to 2015, the position of the pressure source and the volume change, and estimate the temporal change of the pressure source of Miyakejima.

We conducted GNSS campaign observations at 15 reference points arranged so as to be distributed almost evenly throughout Miyakejima from 2 September to 6 September 2013 and from 31 August to 4 September 2015. We used the data obtained from this GNSS campaign observation and the data for the same period of continuous observation points established by the Geospatial Information Authority of Japan etc. In order to analyze the obtained data, the coordinate value of the observation point for each year was obtained using RTKLIBver.2.4.2 software (Takasu et al., 2007).

The pressure source was estimated based on horizontal displacement from 2013 to 2015. The optimum value of the variation was obtained by using MaGCAP-V software (Meteorological Research Institute, 2008) for analyzing crustal activity for volcano. Although the positions of the pressure sources have not changed significantly from 2011 to 2013, it is presumed that the pressure source at the depth of about 0.3~8 km continues to contract and the pressure source at the depth of about 13 km continues to expand.

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