

Deformation monitoring at Tokachi-dake volcano, by using GNSS, tiltmeter, and DInSAR observations

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Tokachi-dake volcano is located in central Hokkaido, Japan, and is the most active volcano in Tokachi-dake volcano group. Middle sized eruptions occurred in 1926, 1962, and 1988-1989, and several small phreatic eruptions also occurred in the meanwhile. After the latest eruption in 1988-1989, many volcanic tremor and active seismicity were revealed. Fumarolic activities from Taisho crater and 62-2 crater have been observed.

Surface deformation in volcano area is one of signals of volcanic activities. There are observation network including V-net by NIED and GEONET by GSI around Tokachi-dake volcano, and deformation monitoring by GNSS and tiltmeter have been operated to detect regional deformation. Geological Survey of Hokkaido and Hokkaido University have several GNSS stations in summit area, and they have been operated to detect local deformation. Moreover, deformation monitoring with higher spatial resolution has been carried out by using satellite SAR interferometry. In this study, we introduce the results from deformation monitoring at Tokachi-dake volcano, by using continuous data from GNSS and tiltmeter of V-net and GEONET, and satellite SAR data from ALOS-2/PALSAR-2 and TerraSAR-X.

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