

Ground Deformation around Domestic Active Volcanoes detected by InSAR of ALOS-2/PALSAR-2

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Monitoring of volcanic activity by observing ground deformation is one of useful means to understand signs of eruption such as accumulation and migration of magma. Japan Meteorological Agency (JMA) monitors volcanic activity by tiltmeter, light wave distance measuring equipment and GNSS around volcanoes. However, there are some problems only using these ground-based observation methods. Observable ground deformation is restricted to point information such as the tilt at the observation point and relative position between observation points. Also, it is difficult to install and maintain observation device at an isolated island such as Nishinoshima volcano. It is important to grasp surface ground deformation around volcanoes using not only ground-based observation but also satellite data like SAR (Synthetic Aperture Radar). In this presentation, we mainly report on the analysis results of the long-term pair (2014 to 2017) around the domestic active volcanoes.

Some of PALSAR-2 data were prepared by the Japan Aerospace Exploration Agency (JAXA) via Coordinating Committee for the Prediction of Volcanic Eruption (CCPVE) as part of the project 'ALOS-2 Domestic Demonstration on Disaster Management Application' of the Volcano Working Group. Also, we used some of PALSAR-2 data that are shared within PALSAR Interferometry Consortium to Study our Evolving Land surface (PIXEL). PALSAR-2 data belongs to JAXA. We would like to thank Dr.Ozawa (NIED) for the use of his RINC software. In the process of the InSAR, we used Digital Ellipsoidal Height Model (DEHM) based on 'the digital elevation map 10m-mesh' provided by GSI, and Generic Mapping Tools (P.Wessel and W.H.F.Smith, 1999) to prepare illustrations.

Keywords: ALOS-2/PALSAR-2, InSAR, Domestic Active Volcano