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# Ground Deformation around the Domestic Active Volcano using InSAR time series analysis

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ALOS has an L-band SAR (PALSAR), which is not affected by vegetation, and the interference is good even in mountainous areas. So these methods are effective for the crustal deformation observation of volcanic areas.

In previous studies, we have reported the analysis results about all domestic active volcanic areas, using D-InSAR of ALOS since 2007. Furthermore, in the last JPGU meeting, we have reported the analysis results about 11 active volcanoes in the Kunashiri and Etorofu islands, Soutern Kuril Islands using *StaMPS* software (Hooper *et al*., 2004).

We are promoting the analysis of ALOS/PALSAR data around the major domestic active volcano in Japan using a similar approach. As a result, we were detected a time series variation of the ground deformation caused by the volcanic activity in some of the active volcano. Note, in the northern volcano area, we analyzed except for the data captured in the winter in order to remove the effect of the snow. *StaMPS* software has the analysis methods to merge these results besides PS-InSAR and SBAS methods. We will report the merged results obtained by these analysis methods.

Some of PALSAR data were prepared by Japan Aerospace Exploration Agency (JAXA) via the Coordinating Committee for the Prediction of Volcanic Eruption (CCPVE) as part of the project “ALOS Domestic Demonstration on Disaster Management Application” of the Volcano Working Group. Also, we used some of PALSAR data that are shared within PALSAR Interferometry Consortium to Study our Evolving Land surface (PIXEL). PALSAR data belongs to Ministry of Economy, Trade and Industry (METI) and JAXA. 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: InSAR time series analysis, Ground deformation, ALOS/PALSAR,, Domestic Active volcano