

Extensive map of interferograms including remote area generated by the data from ALOS/PALSAR

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The Japan Aerospace Exploration Agency (JAXA) launched the Advanced Land Observing Satellite (ALOS), which is commonly called Daichi, on 24 January 2006. This satellite has the Phased Array type L-band Synthetic Aperture Radar (PALSAR) following the mission of the Japanese Earth Resource Satellite-1 (JERS-1). The PALSAR is an advanced SAR sensor with up to 10 m of spatial resolution and variable off-nadir angle. It is expected to get much better coherent SAR images than the other previous C-band SAR satellites and JERS-1, and a major step forward for InSAR (Interferometric SAR) technique is also expected. Actually, several outstanding results from InSAR measurements have been reported for the period after the launch.

Remote sensing technique like ALOS/PALSAR has advantage to observe a remote location, for example Kuril Islands, Kamchatka peninsula, and Aleutian Islands, which have a lot of active volcanoes. In spite of high hazardous nature of aircraft accident, it is quite difficult to access and make observation in the field because of its remote location. Especially, PALSAR can make day and night, and cloud (including ash cloud)-free observation to a target. Taking into consideration the observation schedules and a satellite repeat cycle of about 46 days, we will be able to acquire at least 4 scenes per year for same targets. This means that it is possible to be monitoring of remote volcanoes. In this study, we try to make a selection of coherent image pair in the Kuril, Kamchatka, and Aleutian region, and process by use of SIGMA-SAR software, and generate an extensive map of interferograms. In these results, several remaining fringes caused by orbital and terrain error, and atmospheric artifacts. In the remote site it is impossible to verify the InSAR results due to the lack of other observation data. In the future, we expect a feedback from a comparison and verification of InSAR data using other geophysical data, for example GPS data, at a region where there is a dense observation network.