

Atmospheric disturbance in D-InSAR analysis for Kuju Volcano, Kyushu, Japan

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There are some reports on the D-InSAR crustal movement monitoring in the Kuju volcanic area where the eruption occurred at Mt. Hossho on October 1995 (e.g. Tomiyama et al., 2004). D-InSAR processing of the L-band SAR (JERS-1 SAR, ALOS PALSAR) data is very effective to monitor crustal movements on the vegetated and steep terrains. However, there is sometimes residual phase which correlate with terrain height, and it is inferred as atmospheric disturbance. The residual phase prevented us from detailed monitoring of the crustal movements in the Kuju area (Mt. Hossho and Hatchobaru geothermal field). We carried out D-InSAR analysis for almost all the scenes of JERS-1 SAR (78-245) acquired in the period of September 1992 to September 1998, based on the scene of 20th September 1995, just before the eruption. We will show the effects of parameter setting in the D-InSAR analysis and characteristics of the residual phase which correlate with terrain height. After removal of the residual phase, we discuss on the crustal movements in Mt. Hossho and Hatchobaru geothermal field. We are grateful to Dr. M. Shimada for the use of his SIGMA-SAR interferometry software (Shimada, 1999). METI/JAXA retains ownership of JERS-1 SAR data. Part of this study was carried out under the support by the Earthquake Research Institute cooperative research program (2006-B-06).

[References]

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