Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

STT57-P08 Room:Convention Hall Time:May 23 17:15-18:30

Estimation of the area and the thickness of volcanic ash by using DInSAR technique

NAKANO, Youko[1*], SHIMIZU, Takeshi[1], YAMAKOSHI, Takao[1], Tadanori Ishizuka[1], Eiichi Wakabayashi[2]

[1]Public Works Research Institute, [2]Yachiyo Engineering CO., LTD.

On October 26, 2010, Mt. Merapi located in central Java Island in Indonesia erupted. This eruption caused a huge pyroclastic flow. And the Gendol River originating from the southern flank of Mt. Merapi, was filled with pyroclastic deposit. Lahars occurred on the rivers originating from the western flank of Mt. Merapi, during the rainy seasons from 2010 to 2012. The area of western flank of Mt. Merapi is assumed to have been covered with thick volcanic ash by the eruption. It is assumed that the thick volcanic ash caused a frequent occurrence of mudflows at the rivers located on western flank of Mt. Merapi.

On the other hand, Ozawa (2011) reported that the estimated thickness by the interferogram generated from a pair of the JAXA's ALOS/PALSAR images before and after eruption, was in good agreement with the result of field investigation of volcanic ash on the 2011 Mt. Kirishima (Shinmoe-peak) eruption.

The authors estimated the area and the thickness of volcanic ash at the time of the eruption of Mt. Merapi through the same technique and the same satellite sensor utilized by Ozawa (2011). And on the other hand, we conducted a field survey of the thickness of volcanic ash between Sept. 2011 and Feb. 2012. The authors earned that the estimated area and thickness of volcanic ash by DInSAR, was in good agreement with result of field investigation of volcanic ash.

ACKNOWLEDGMENT: The authors would like to thank JAXA for its free provision of ALOS imagery, and thank M. Shimada of JAXA for the use of his SIGMA-SAR interferometry software [M. Shimada, 1999].

Keywords: Mt. Merapi, volcanic ash, volcanic ash, DInSAR