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Possibility of detection of active landslide block by In-SAR image

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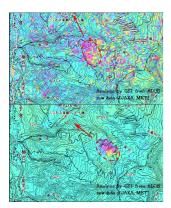
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In-SAR image is well-known as detecting crustal movement in wide area when hazardous events like earthquakes and volcanic activities occur. In addition to detecting such wide movement, small and regional movements were observed at Noto Hanto Earthquake in 2007 using In-SAR image. Most of those small movements were occurred at known landslides, and these facts were thought to express that landslides were triggered by the earthquake (Une et. al., 2008). Those results show that detection and monitoring of landslides might be done with In-SAR image. On the basis of the results, we delved into possibility of the detection and monitoring at Higashinasuse village in Akita prefecture using ALOS/PALSAR data in this study.

There are many famous landslides in this area, e.g. Yachi Landslide. Among those landslides, Ohkamizawa landslide on the right bank of Naruse river is an active one at rates of more than 10cm/year, and this landslide movement could be observed at In-SAR image.

Ohkamizawa landslide is delimited into several blocks by making out micro- topography. In-SAR image shows that locations of vivid fringes seen at 2006-2007 (Upper image) and at 2008-2009 (Lower image) are different. In fact, the fringe in 2006-2007 corresponds with a lower block, and 2008-2009 corresponds with a upper block.

These results show that it might be mentioned not only existence of landslide but also detection and monitoring of individual block movement, using In-SAR image.



Keywords: SAR, ALOS/PALSAR, Landslide