The surface rapture of the 2014 Northern Nagano Earthquake detected by InSAR

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The DInSAR results (phase image and coherence image) derived from the sateraite images, displayed the visualization of large-scale fault motion and surface ruptures.
Since there is no blurring or terrain information interpreted on the image, it is difficult to extract the seismic surface ruptures and correct positioning of the surface rupture using only two images.
We developed a new surface rupture methodology by combining DInSAR result and the terrain representation image.
We applied the developed methodology by utilizing ALOS-2 data and created the DInSAR results for the past 2014 Northern Nagano Prefecture Earthquake and compared the extracted information with the local situation.
We confirmed intermittent surface ruptures from Shiroyama to Horinouchi in Hakuba village.
In Horinouchi, although broad flexural deformation appeared, the amount of deformation was small and mapping was difficult. The image was able to show this deformation area.
The present paper describes that the developed methodology could extract the seismic surface rupture over a wide area quickly, and demonstrated the potential mapping effectiveness as well.

Keywords: DInSAR, Surface rupture, 2014 Northern Nagano Prefecture Earthquake

