The grand deformation detected by new method of InSAR, in the 2016 Kumamoto Earthquake

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The InSAR results derived from ALOS-2 images, displayed the visualization of large-scale fault motion and surface ruptures. But it is difficult to extract the seismic surface ruptures and correct positioning of the surface rupture using only phase image. We developed a new surface rupture methodology by combining InSAR results, phase image and coherence image, and the terrain representation image. We applied the developed methodology by utilizing ALOS-2 data and created the InSAR results for the 2016 Kumamoto Earthquake and compared the extracted information with the local situation. In MItake Mashiki town, the results shown that the surface rupture detected by this methodology coincided with the surface rupture and strained fields as confirmed by the conducted field survey. But then, in Togawa Mashiki town, there are only cracks on the road at low-coherence zone. After the carefully survey, we discovered broad deformation at the roads and channels.
This method can extract the seismic surface rupture over a wide area. In addition, this method is possible to catch the deformation of the ground level which it's difficult to recognize as the surface rupture.

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