

A Catalog of ALOS-2 SAR Interferograms Associated with Global Large Earthquakes in 2014-2016

*Yu Morishita¹

1. Geospatial Information Authority of Japan

I produced SAR interferograms using ALOS-2 data to detect coseismic deformations associated with large (magnitude ≥ 6) and shallow onshore earthquakes from August 2014 to December 2016 all over the world. Substantially coherent interferograms were produced for all 30 targeted seismic events, even in tropical areas, where C-band Sentinel-1 interferometry is unpromising due to a severe decorrelation problem. High coherence of the ALOS-2 InSAR also greatly helps to identification of surface ruptures. In this study, surface ruptures were successfully identified at least in seven events. Moreover, left-looking observations of ALOS-2 enable to retrieve three dimensional deformation with high precision, including the north-south component, although the left-looking observations are basically conducted only in Japan area. In the case of the 2016 central Tottori earthquake, Japan, clear four-quadrant three dimensional deformation pattern was retrieved, implying that almost pure sinistral slip occurred.

Keywords: ALOS-2, InSAR, Crustal deformation, Surface rupture