

STT057-P03

Room:Convention Hall

Time:May 24 16:15-18:45

InSAR analysis of the 2010 Fukushima-ken Nakadori Earthquake

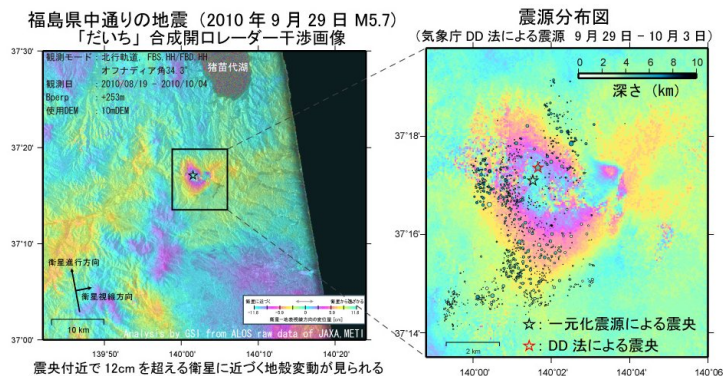
Mikio Tobita^{1*}, Tomokazu Kobayashi¹, Akira Suzuki¹, Yuko Noguchi¹

¹GSI of Japan

A Mjma 5.7 earthquake occurred in the Nakadori region of Fukushima Prefecture on 29 September 2010. Though the estimated depth of the hypocenter is 8 km (JMA), the quake registered an intensity of 5+ on the Japanese scale at the very localized area in Tenei village. We investigated this local phenomenon with InSAR and GPS data and field study. GEONET (GPS Earth Observation Network System) data indicated that small east-west compression. ALOS PALSAR interferograms of 4 July 2010 ? 4 October 2010 and 19 August 2010 ? 4 October 2010 from Ascending orbits show ?12 cm line-of-sight (LOS) displacements to the satellite. These interferograms include also positive, mainly eastward, LOS displacement signal, which is likely due to landslide induced by the earthquake. We calculated interferogram with an elastic half-space dislocation model by assuming the centre depth of the fault plane is at 2km, 5km, and 8km. The calculated interferogram of the 2 km depth best reproduces the observed interferogram, suggesting that there is a significant discrepancy in the depth between seismic and geodetic approaches. We also report the results of our field study in November 2010.

Acknowledgments

This work was conducted as a collaborative research project between GSI and JAXA. PALSAR data were analyzed by GSI from the ALOS raw data provided by JAXA and METI.



Keywords: interferogram, InSAR, ALOS, Crustal Deformation, landslide