Estimation of fault model of the 2017 Pohang, South Korea earthquake using seismic and geodetic analyses

*朴 舜千[1]、Won-Jin Lee[2]、Geunyoung Song[1]、Duk Kee Lee[1]
*Sun-Cheon Park[1], Won-Jin Lee[2], Geunyoung Song[1], Duk Kee Lee[1]

1. 韓国気象庁、2. 韓国環境科学院
1. Korea Meteorological Administration, 2. National Institute of Environmental Research

　　After the 2017 Pohang, South Korea earthquake with magnitude (ML) 5.4, surface deformation was observed using Interferometric Synthetic Aperture Radar (InSAR) technique. This observation of surface deformation can be a constraint to estimate the fault model in addition to aftershock distribution and other seismic information. As the result of InSAR processing using X-band Cosmo-Sky-Med and C-band Sentinel-1 data, we observed the maximum deformation of about 4 cm in Line-Of-Sight (LOS) direction.

　　Considering this observation, we estimated the fault model of the 2017 Pohang earthquake. We determined hypocenters of the earthquake sequence and carried out moment tensor inversion. Then we estimated the dimension and depth of the fault plane using aftershock distribution and displacement on the fault using the seismic moment. Surface deformation was calculated using the formula of Okada (1985) and assuming several models of slip distribution on the fault and was compared with the surface deformation pattern in LOS direction. Larger surface deformation toward the satellite was observed to the northeast from the epicenter and this pattern was well explained by fault models having the slip on the shallow fault plane. During the presentation, we will discuss more about the fault model comparing surface deformation and the aftershock distribution.

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