

Evaluation for detection capability of ground subsidence by InSAR time series analysis

MIYAHARA, Basara^{1*}, YAMANAKA, Masayuki¹, KOBAYASHI, Tomokazu¹

¹Geospatial Information Authority of Japan

Geospatial Information Authority of Japan (GSI) has been monitoring ground subsidence at 17 areas in Japan with SAR Interferometry (InSAR) analysis of ALOS/PALSAR. The subsidence is estimated by stacking process of several InSAR images, which averages and reduces noise included in the images. We evaluated detection capability of the stacking method by comparing subsidence measured by leveling. The result shows that the subsidence detected by both methods is consistent within about 1cm at Kujukuri Plain, Tsugaru Plain and Niigata Plain. In order to evaluate detection capability of ground subsidence by InSAR time series analysis, we estimate subsidence by InSAR time series analysis at still subsiding Tsugaru Plain, and compare the result with those by leveling and stacking method.

Keywords: SAR Interferometry, Time series analysis, Ground subsidence, StaMPS, ALOS, PALSAR