YANGON SURFACE DISPLACEMENT AS DETECTED BY INSAR TIME SERIES ANALYSIS

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ABSTRACT: This paper presents Yangon's surface displacement during the period between April 2012 to April 2014 as detected by InSAR time series analysis. The study applies a combined method of persistent scatterer (PS) and small baseline (SB) to analyze a suite of 16 Radarsat-2 SAR images. The revealed pattern of displacement in line-of-sight direction suggests that the surface motion is caused by non-seismic activities. We then convert the line-of-sight to vertical motion. The vertical displacement rates are between +55 and -74 mm/year. Most areas between Yangon river and Ngamoeyeik creek appear to be stable. Fast uplift of the rates +25 to +30 mm/yr are presented in West Yankin area. The true causes of these upward motions are presently unknown. Subsidence is revealed in North Dagon Township on the east side of Ngamoeyeik creek. The area between Dagon University and East Dagon Industrial Zone is heavily subsiding at the rate between -50 and -65 mm/yr. The cause of this subsidence is likely groundwater extraction. At present, validation of our InSAR result with leveling or other ground-based measurements cannot be made because the unavailability of data. However, the results demonstrate the potential of InSAR as a space-based geodetic tool for change monitoring.

- Oral presentation is preferable.
- This article will be presented by Dr.Anuphao Aobpaet
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