



Infrastructure Subsidence Monitoring with Multi-Sensor Persistent Scatterer Interferometry

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In our study, we investigate application of time-series SAR interferometry from multi-sensors into infrastructure monitoring in urban area. Nowadays interests of subsidence monitoring with time-series interferometry are increasing not only in large-scale land subsidence and earthquakes but also in tiny target of infrastructures, such as building, bridge, dam, airport and river dike. In this context, frequent observation is desired by managers of the infrastructure for monitoring their safety and limited observation scenes decrease availability of the application. Therefore, this research is focusing on evaluation of monitoring enhancement by integrating several sensors to increase observation rate and/or number of scenes of the dataset. The technique integrating different sensors, ALOS and ALOS-2, into persistent scatterer interferometry has been reported by Anahara and Shimada [1] and it is extended to multi-frequency, such as X- and L-band. By use of the integration of sensors, subsidence of infrastructures is tested and discussed. These results are to be quantitatively evaluated in comparison to ground truth data.

[1] Takuma Anahara and Shimada Masanobu, "Inter-sensor analysis of multi-temporal L-band SAR interferometry," in IEEE International Geoscience and Remote Sensing Symposium, July 2017.