

## MONITORING SURFACE DEFORMATION ON SIBERIA, YAKUTSK USING INSAR

Yeji Lee, Yoon Taek Jung, Keun Hoo Cho, Minhwa Kim, Sang Eun Park

Sejong Univ., 209 Neungdong-ro, Gwangjin-gu, Seoul 05006, Korea

Email: [yeaji1204@naver.com](mailto:yeaji1204@naver.com); [kleaner@naver.com](mailto:kleaner@naver.com); [shagi22@naver.com](mailto:shagi22@naver.com); [k\\_mh62@nate.com](mailto:k_mh62@nate.com);  
[separk@sejong.ac.kr](mailto:separk@sejong.ac.kr)

**Abstract:** The active layer of permafrost undergoes annual freezing and thawing. Thawing of active layer causes surface subsidence called thermokarst which is indicator of ground ice fluctuation in permafrost. The expansion and shrinkage of thermokarst may affect production of carbon resulting in environmental and climatic impacts on global scale. Therefore, it is necessary to monitor thermokarst terrain in permafrost. Since permafrost covers wide area, remote sensing is useful tool to understand thermokarst terrain of permafrost. In this study, C-band Sentinel-1 images and L-band ALOS images of Yakutsk, Siberia are used to map the cumulative surface deformation at thermokarst terrain. Elevation change was observed during the winter season between 2018-19 using time-series interferometry SAR. The objectives of study are to measure thermokarst deformation and to analyse deformation trend in winter season.

**Keywords:** Permafrost, Yakutsk, Sentinel-1, ALOS, Interferometry SAR