

Netherlands Center for Geodesy and Geo-informatics

Abstract submission for the NCG Symposium 2020

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Presentation title:

Attribute-enrichment of satellite InSAR deformation measurements based on contextual information

Demo: yes/<u>no</u>

Abstract:

Satellite radar interferometry (InSAR) is a useful technique for monitoring surface displacements, oftentimes indicating cases of subsidence, foundation issues, or other types of loading. However, the complex nature of InSAR observations hinders their correct interpretation and applicability for a broader audience. The aim of this research is to develop a procedure to enrich InSAR point clouds with attributes from Dutch open-source auxiliary data, e.g. object type (building, infrastructure), soil type, foundation, etc. The resulting n-dimensional system will enable the end user to efficiently query data points, based on their origin or other predetermined conditions. Moreover, spatio-temporal deformation patterns can be identified through exploratory data analysis and other search algorithms, facilitating the overall interpretation of InSAR data.



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Figure 1. Example of a weak location in a Dutch dike, detected by a radar satellite, based on millimeter-level deformations, potentially leading to dike failure (Bruna, unpublished).