



## **InSAR.no: First results from the Norwegian national deformation mapping service**

John F. Dehls (1), Yngvar Larsen (2), Petar Marinkovic (3), and Dag Anders Moldestad (4)

(1) Geological Survey of Norway, Trondheim, Norway (john.dehls@ngu.no), (2) Norut, Tromsø, Norway (yngvar.larsen@norut.no), (3) PPO.labs, The Hague, Netherlands (petar.marinkovic@ppolabs.com), (4) Norwegian Space Centre, Oslo, Norway (dag.anders.moldestad@spacecentre.no)

For more than a decade, InSAR has been used in Norway to study landslides and subsidence. Initial studies concentrated on understanding and validating the technique in various settings. During the last seven years, however, we have moved towards using InSAR in operational settings, primarily using data from Radarsat-2 and TerraSAR-X.

In May 2016, we launched a national InSAR-based deformation mapping service, based upon the Sentinel-1 satellites. Its mandate is to provide the public in Norway with nationwide deformation products. The service will provide periodically updated deformation data, with varying resolution for urban and non-urban areas. The products will be made available to various local, regional and national authorities via appropriate web GIS protocols. The data will also be made available to the public via a web map interface with simple tools to query and visualize the information.

Scaling up from regional operations, based upon data every 24 days, to a national operation, with data every 6 days, is challenging. In addition to the challenges of scaling up (processing system, algorithms, products, data management, dissemination), Norway has the additional challenges of long winter seasons and rough topography.

In this contribution, we will present our approach by summarizing the basic product requirements from the end user perspective. We will also describe ongoing research and development activities needed to meet the identified requirements. We will conclude by demonstrating an initial version of large-scale deformation maps that are to be provided by InSAR.no.