Integration and interpretation of InSAR deformation products from the Sentinel-1 constellation - experiences from the InSARap project

John F. Dehls (1), Yngvar Larsen (2), Petar Marinkovic (3), and Zbigniew Perski (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) Polish Geological Institute, Warszawa, Poland (zper@pgi.gov.pl)

The Sentinel-1 mission has been in operational mode for more than two years, and with the successful commissioning of S1B in Sep 2016, the constellation is now complete. While the InSAR community initially faced many processing challenges due to the introduction of the new TOPS mode, these issues can by now considered resolved. However, truly operational workflows are still to be designed and deployed, and there are a number of integration and interpretation challenges that need to be addressed to achieve operational processing of 6-day revisit InSAR data.

In this contribution, we will focus mainly on the integration and interpretation of InSAR products in scientific workflows, rather than on algorithmic details. We will motivate discussion with results obtained from selected pilot sites within the ESA SEOM InSARap project. The sites cover a large part of the application domain for InSAR – "from decimeter to millimeter". Specifically, landslide and corner reflector validation test sites in Norway and Poland will be discussed.

The results will serve as basis for a discussion on how to communicate and streamline a portfolio of subsidence products to end users, which is a challenge in itself. We will conclude with a discussion on remaining open questions regarding how we as a community can address these issues to a wider audience.