

DIMCOR – Displacement Monitoring using Corner Reflectors

Automated measurement of surface deformations at millimetre range based on radar satellite images



InSAR (Interferometric Synthetic Aperture Radar)

This remote sensing technique uses images from spaceborne SAR satellites to measure ground surface deformations with millimetre precision. Corner reflectors (CR), which are man-made targets placed on the ground, enhance the accuracy and reliability of InSAR measurements in challenging areas where natural reflectors may be insufficient.

With our many years of experience, we offer a tried and tested complete package for the efficient management of long-term surveying tasks, even in difficult environments.

The Task

- Automated evaluation of displacement for every corner reflector
- Using all available orbit directions for getting a most complete representation of the true displacement

Your Benefits

- Frequently updated information about deformation
- Minimal maintenance and servicing
- No power supply or data transmission required

Capabilities

- Works with commercial or open and free satellite SAR data
- Measurement of vertical and horizontal displacements
- Can deal with nearly all weather and daylight situations

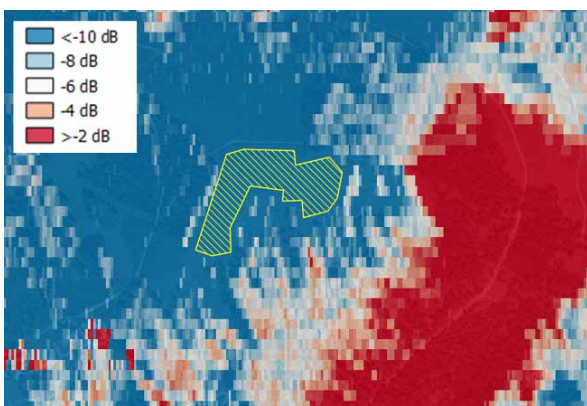
Integration

- Customized solution for your specific application requirements
- Integration into existing surveillance systems possible

DIMCOR – Start-Up Phase

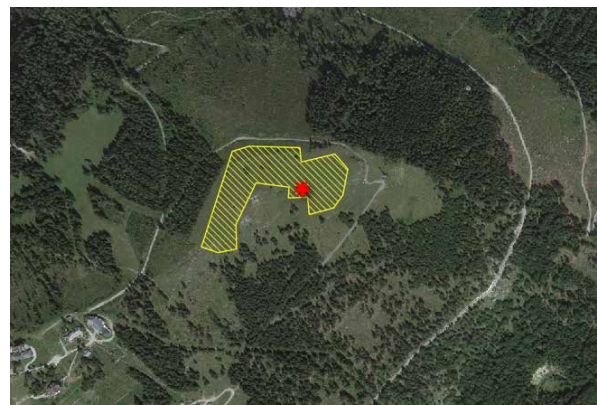
Activities

- Backscatter analysis of archive SAR time series
- Masking out infeasible areas
- Include additional information like geology, cadastre or accessibility



Advantages

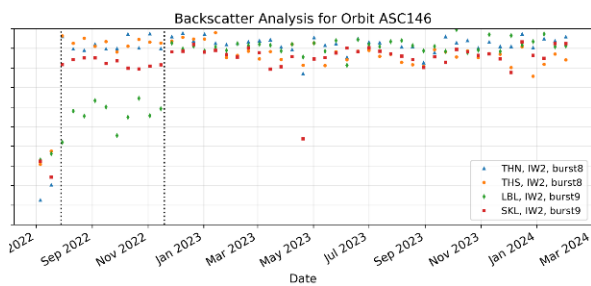
- Improving the coverage of current SAR-based monitoring services by broadening the geographical scope of deployment
- Pre-selection of best-suited CR placements



DIMCOR – Installation Phase

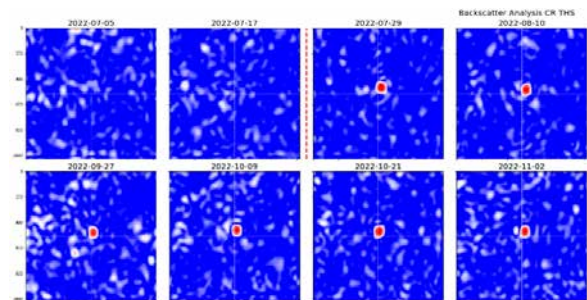
Activities

- Orientation of the CR heads towards the SAR sensor
- Backscatter analysis of CRs in actual SAR time series



Advantages

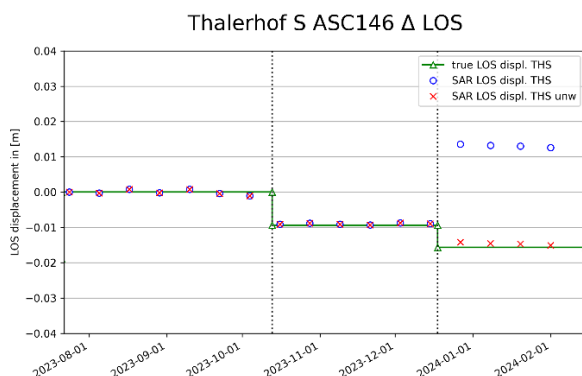
- Early detection of imprecise orientation
- Timely detection of malfunctions caused by e.g. snow cover, vandalism or other damage to the CR



DIMCOR – Operational Phase

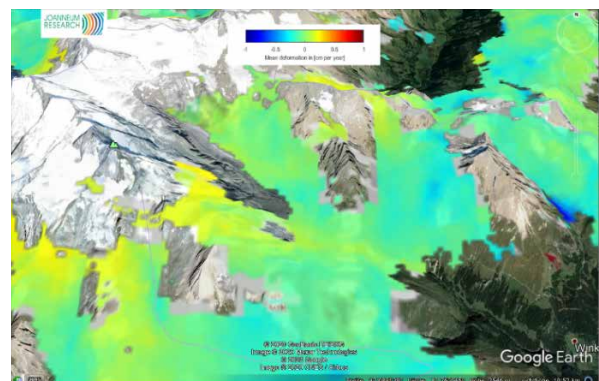
Activities

- Compilation of satellite data
- Data processing up to displacement time series
- Integration of results into existing monitoring system
- Additional quality reporting and system diagnosis



Advantages

- Early, remote detection of impending danger due to unusual displacement pattern
- Improved forecasting quality through spatially denser and temporally more frequent observations of deformations
- Monitoring of precisely identified locations



**Technical Development
and Information:**

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