

Germany

Surveying Authorities of the Laender of the Federal Republic of Germany (AdV)

Implementation of ‘Ground Movement Cadastres’ in Germany – a significant contribution for (post) mining monitoring

“In Germany, hard coal mining was terminated in the last decade. To achieve EU and national climate goals, open-cast lignite mining will be terminated during this decade. Accompanying this process, the Surveying and Mapping Authorities monitor vertical height changes. Integrated approaches combining levelling and radar interferometry significantly improve this task.”

Jens Riecken

Chair of Working Group
Spatial Reference of the
Working Committee of
the Surveying Authorities
of the Laender
of the Federal Republic
of Germany (AdV)

Radar data provided free-of-charge from the Copernicus programme’s Sentinel-1A and 1B satellites is key to post-mining monitoring in Germany.

This open data policy motivated several surveying and mapping authorities to use radar observation to establish ‘Ground Movement Cadastres’. This official product uses terrestrial levelling data for calibration and validation for a multi-level quality assurance process and takes into account data protection standards.

Thus, radar interferometry becomes a new observation technique in the field of geodetic reference, enabling cost-effective and precise completion of legal tasks.



Find out more at
<https://geodaesie.info/zfv/heftbeitrag/8506>

Benefits

- Provides very good alignment of levelling and radar interferometry with regards to vertical ground movements and simultaneously significant data compression.
- Enables detection of new uplift areas outside the levelling lines, and confirmation of stable areas.
- Provides a complete process chain based on official reference data, reliability through multiple determinations (calibration and validation).
- Delivers an official product of the surveying and mapping administration with free access for everybody, taking into account data protection standards.
- Enables a more economical execution of legal tasks using remote sensing, high social and environmental importance and perception.

