

Monitoring ground displacements using satellite technologies

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Abstract:

Monitoring is important for assessing the stability of structures and for confirming the validity of the design during the construction and operation of structures. The ideal monitoring system for projects in Rock and Geotechnical Engineering would be able to monitor the behavior of small to extensive areas continuously and automatically with high accuracy. In addition, the costs should be low and the handling should be easy.

The concept of spatio-temporal continuous displacement monitoring is introduced in this presentation. The use of both satellite technologies and geotechnical instruments is effective for realizing such monitoring. Furthermore, practical applications of GPS and DInSAR for monitoring an unstable steep slope, a large landslide, large-area subsidence, and ground displacements due to an earthquake are illustrated.