



Advancements in Ground Movement Monitoring through Remote Sensing Techniques

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Message from the Guest Editors

Visual inspection, crack meters, surveying/prisms and inclinometers and extensometers are examples of the conventional geotechnical instruments for monitoring the surface and subsurface ground movement. Some of these methods have recently been used with automated measuring systems, e.g. robotic total stations, Global navigation satellite system (GNSS) and Terrestrial Laser Scanner (TLS), but they cannot be defined as fully “remote” since they need targets or sensors installed on the ground. In recent years, digital image correlation techniques have emerged as a remote displacement measurement method, due to its advantages of low cost, and full-field deformation measurement. These techniques are based on the comparison of images, gathered at different times, typically from aircrafts, unmanned aerial vehicles (UAV) or satellites. For each source, methods have been developed to obtain ground movement from these images. As an example, regarding data gathered from satellites, recently, monitoring of ground deformation at centimeter to millimeter resolution has been achieved in some studies with the spaceborne Synthetic Aperture Radar (SAR) interferometry method.





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Message from the Editor-in-Chief

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