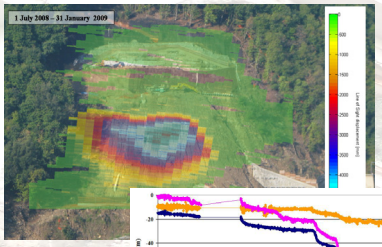
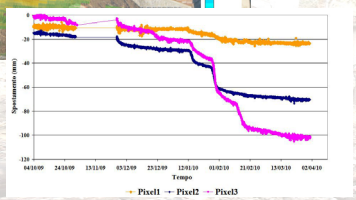
NHAZCA S.R.L.
NATURAL HAZARDS CONTROL AND ASSESSMENT
Spin off di
SAPIENZA UNIVERSITÀ DI ROMA

MONITORING NATURAL INSTABILITIES BY TERRESTRIAL SAR INTERFEROMETRY

THE TECHNIQUE





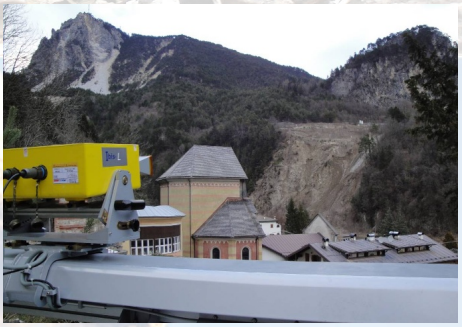
Terrestrial SAR Interferometry (TInSAR) is an innovative remote sensing technique for the monitoring of natural instabilities like landslides, rock slopes, volcanoes, glaciers etc. In what follows, the main features of the technique are listed:

- quick device installation (a few hours);
- high data sampling rate (up to 5 minutes);
- completely remote monitoring (no further installations on the unstable area are required);
- high instrumental range operability (up to 4 kms);
- displacement detection of large areas instead of single points;
- full operability both night and day and in every weather condition;
- high precision and accuracy displacement measures (up to some tenths of millimetre).

FIELDS OF APPLICATION AND EXPECTED RESULTS

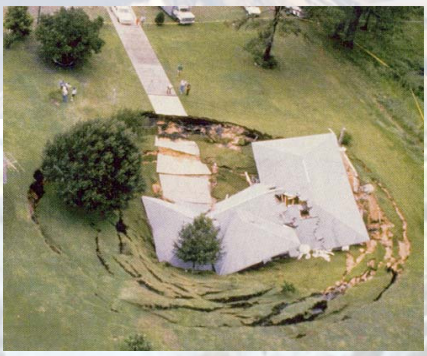
Landslides:

- assessment of the state of activity;
- mapping the unstable areas of the slope;
- measure of the displacements entity;
- evaluation of the rainfall impact on the instability;
- real time displacement monitoring in emergency conditions;
- quick time evaluation of the instability conditions;
- performance tests of stabilization structures (e.g. walls).



Rock cliffs and cuts:

- detection and mapping of unstable rock blocks over large cliffs;
- monitoring of the stability condition during the works;
- performance tests of stabilization structures.



Monitoring of localized subsidence phenomena (sinkhole):

- precise mapping of areas affected by subsidence;
- measure of the subsidence rate;
- early warning monitoring in case of sudden subsidence phenomena.

Glaciers monitoring:

- mapping of areas affected by displacements;
- extimation of the movement velocity.

Volcanoes monitoring:

- identification and mapping of the unstable areas;
- identification of the deformations induced by the internal lava flows.

WHY CHOOSE NHAZCA

NHAZCA is a spin-off company of “Sapienza” Università di Roma with a large experience on natural risks and geological instabilities. NHAZCA technicians and consultants are highly qualified on TInSAR monitoring, as demonstrated by a large number of papers in international technical and scientific journals. NHAZCA makes use of state of the art technologies and constantly develops customized solutions such as: i) LARAM[SM]; ii) the quick installation systems (QUIB[TM]).

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