

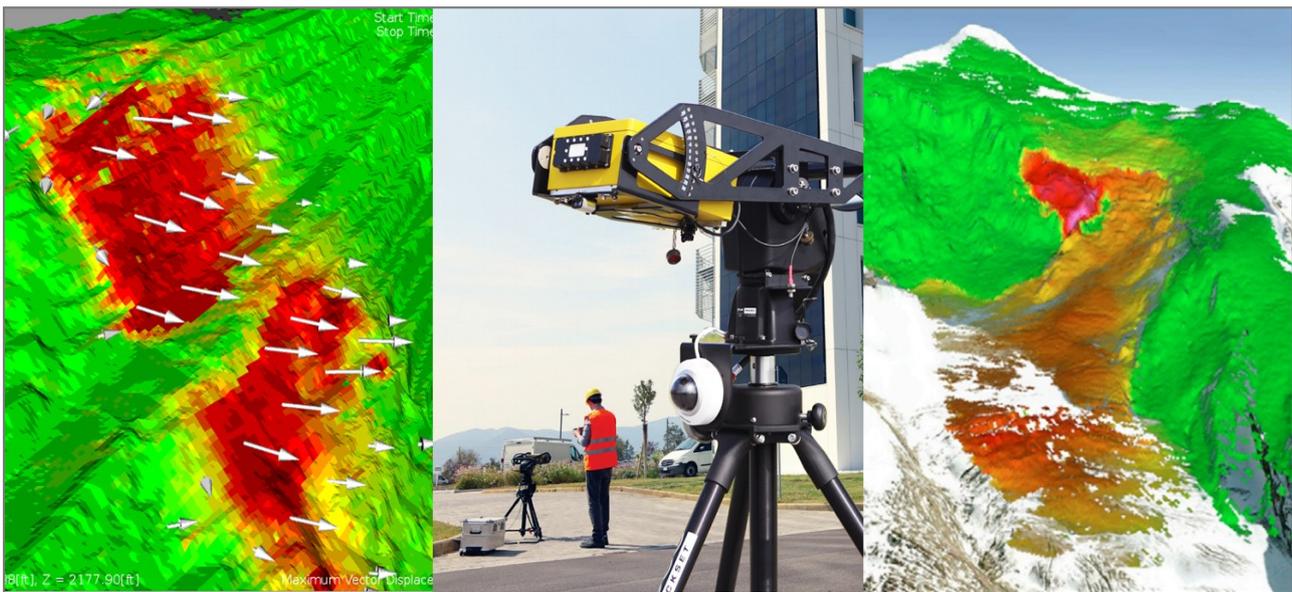
Seminario di “Avvio al Lavoro”

Ground-based radar interferometry Principles, applications and future developments

Giovedì, 10 novembre – ore 16:30 Aula Arduino

Relatore: **Dr. Michelini Alberto**

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Ground-based radar interferometry (GBRI) is a remote sensing imaging technique based on coherent radar systems, which can measure not only the amplitude, but also the phase of the microwave signals. The phase measurements can then be exploited to derive information on the deformation and topography of the measured scene.

In the last decade GBRI has gained an increasing interest as a deformation measurement and monitoring tool, and currently is a well-established technology, usually exploited by geophysicists, engineers and geotechnicians. Thanks to its high sensitivity to small deformations, its long range of measurements, and its imaging capability, GBRI is complementary to many other existing deformation measurement techniques.

In the first part of this lecture the working principles of the GBRI technique are presented: starting from the radar and interferometry basics, we will discuss the fundamental steps of data acquisition, processing and analysis, then we will finish presenting the different systems and technologies currently available.

In the second part of this lecture a review of the various GBRI applications will be provided: starting from the classic structures, landslides and glaciers deformation monitoring, up to the most recent integration with other measuring system, displacement vector reconstruction, rockfall tracking, blasting and underground monitoring.

Proponente: **Giorgio Cassiani**