



APhoRISM FP7 project: the A Priori information for Earthquake damage mapping method

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The APhoRISM – Advanced PRocedure for volcanIc and Seismic Monitoring - project is an FP7 funded project, which aims at developing and testing two new methods to combine Earth Observation satellite data from different sensors, and ground data for seismic and volcanic risk management. The objective is to demonstrate that this two types of data, appropriately managed and integrated, can provide new improved products useful for seismic and volcanic crisis management.

One of the two methods deals with earthquakes, and it concerns the generation of maps to address the detection and estimate of damage caused by a seism. The method is named APE – A Priori information for Earthquake damage mapping. The use of satellite data to investigate earthquake damages is not an innovative issue. Indeed, a wide literature and projects have addressed and focused such issue, but usually the proposed approaches are only based on change detection techniques and/or classifications algorithms. The novelty of APhoRISM-APE relies on the exploitation of a priori information derived by:

- InSAR time series to measure surface movements
- shakemaps obtained from seismological data
- vulnerability information.

This a priori information is then integrated with change detection map from earth observation satellite sensors (either Optical or Synthetic Aperture Radar) to improve accuracy and to limit false alarms.