



Cavola Experiment: a dense broadband seismic array on an active landslide

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In the period 19/7-21/10 2004 we ran a seismological experiment using more than 100 seismometers on the active landslide of Cavola located in the Regione Emilia Romagna territory (Northern Italy). The goal of the experiment is a detailed study of seismic waves propagation in a heterogeneous medium characterized by a complex 3D geometry, with the aim of modelling the site amplification.

In order to define the site characteristics we used a multidisciplinary approach based on geoelectrical and seismic refraction survey. Also a borehole was drilled within the array area and in situ wave velocities were measured.

The array consisted of 95 identical portable seismometers deployed in a grid configuration of 112 m x 80 m. In addition, 4 stations were deployed in the urban area of Cavola, and 5 more stations in a regional configuration to reduce the detection threshold of the National Seismic Network (RSN) around the array. The seismometers of the local array were GURALP CMG-6TD and were on loan from SEIS-UK. For the regional network, the Reftek 130 acquisition systems coupled with Lennartz sensors owned by INGV-CNT were used. All the seismometers recorded in a continuous mode hence we obtained more than 900 Gb of data including more than 100 earthquakes, both local and regional.

Here we will present some preliminary results including a reconstruction of the geometry of the landslide investigated, as well as the estimation of the soil mechanical properties and of the site response.