Gruppo Nazionale di Geofisica della Terra Solida

TEMA 3: GEOFISICA APPLICATA

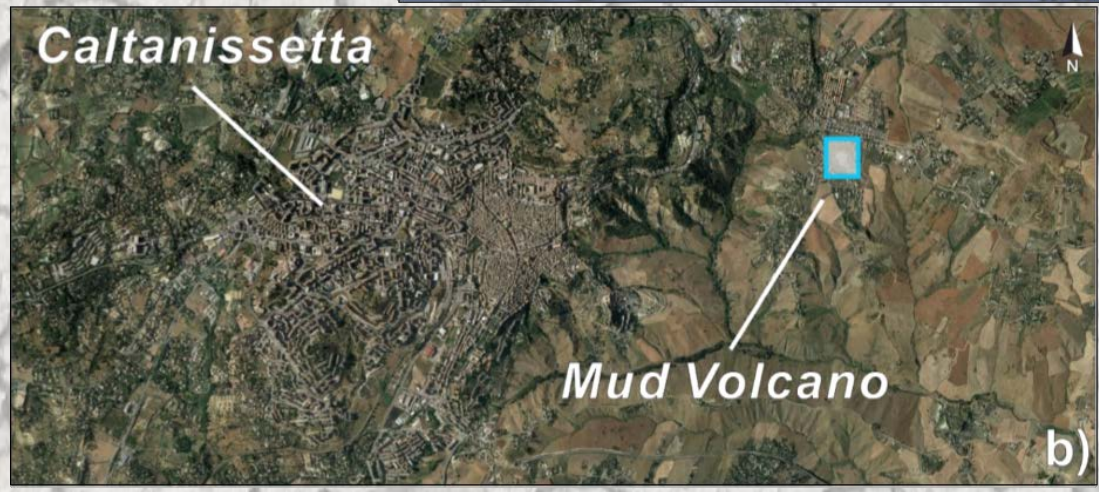
Sessione 3.2: Geofisica applicata per le strutture superficiali e i rischi ambientali

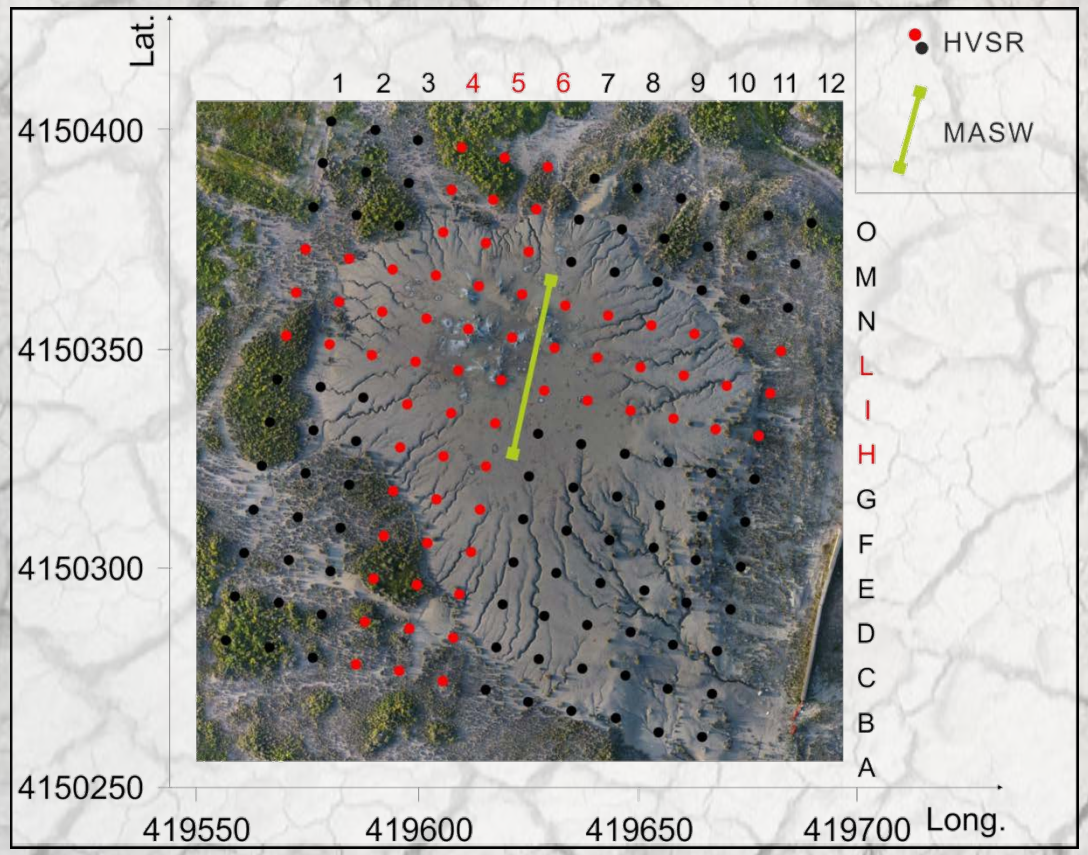
Geophysical and geodetic surveys for the characterization of the Santa Barbara mud volcano subsoil (Caltanissetta, Sicily): preliminary results.

S. Imposa, S. Grassi, G. De Guidi, G. Patti, F. Brighenti, F. Carnemolla

Introduction

This study presents the preliminary results of geophysics and geodetic field surveys involving the Santa Barbara mud volcano area, aimed at characterized its subsoil. The Santa Barbara mud volcano area is located in central sector of Sicily, on the eastern outskirts of the Caltanissetta district, at about 520 m a.s.l..





GNSS survey to create a georeferenced grid (156 nodes)

Preliminary results

All the impedance contrast sections are characterized by low H/V amplitude (<1) in their shallow parts, **probably linked to the presence of muddy material from about 1 to 5 meters depth**. **Another area at a depth of approximately 40 m, shows the same characteristics**, highlighting the possible presence of another zone where this muddy material can be present. The parts of sections characterized by major H/V amplitude values can be related with the transition between the muddy material and the surrounding lithotypes.