3D ELECTRICAL RESISTIVITY TOMOGRAPHY AND SEISMIC REFRACTION TOMOGRAPHY SURVEY IN THE ARCHAEOLOGICAL SITE OF OCCHIOLÀ (CATANIA, SICILY)

Occhiolà (Sicily, Italy) is a medieval village, located on the north western part of a hill named Terravecchia at 491 m asl, still presents the imposing ruins of the castle and part of the urban plan. In 1693 the village was severely damaged and abandoned after a violent earthquakes. The first event, on January 9, frightened the population and caused diffuse damage (I = VII-VIII MCS), but it was the strongest earthquake occurring two days later which totally destroyed the village. Buildings, weakened by the previous shock, were completely raised to the ground (I = XI MCS); half of population (ca. 1470 people) died under the pile of ruins.

Prince Carlo Maria Carafa Branciforte di Butera rebuilt the town, with the name of Grammichele, in a site located on the plain a few kilometres from the old one.

Geophysical survey was undertaken in the castle’s imposing structure occupies the north part of the ancient town of Occhiolà. In order to obtain a spatial definition of the archaeological structures, 3D Electrical Resistivity Tomography (ERT) and 3D seismic refraction tomography geophysical methods were used.

The data were visualised in a more effective manner the three-dimensional position of the anomalies evidenced in the single electrical and seismic sections. The results obtained in the survey underline the presence of structures of regular shape probably due to features of archaeological interest.