First Annual Meeting of the INGV Seismological Project
Rome, 19-21 October 2009

PROJECT S4: ITALIAN STRONG MOTION DATABASE
Task 2: Geological-geotechnical catalogue of ITACA sites

MAIN CHARACTERISTICS OF THE NEW ITACA MONOGRAPH AND COMPILING ACTIVITY, WITH SPECIAL ATTENTION TO GEOTECHNICAL DATA

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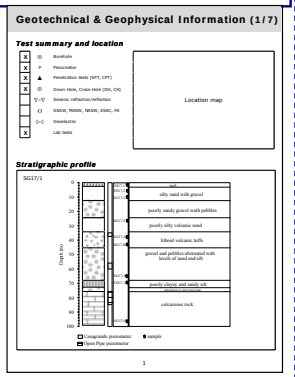
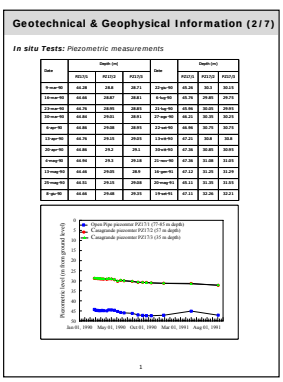
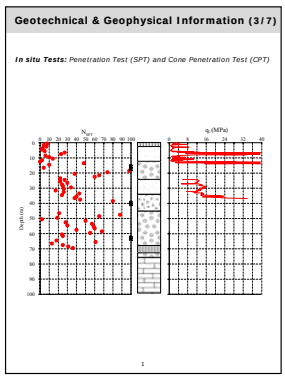
Objectives of RU6

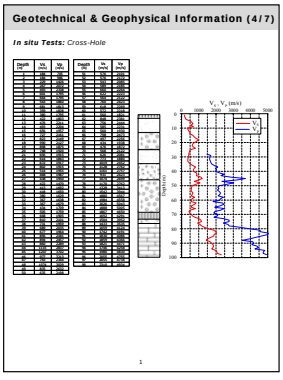
RU6 is involved in the Task 2 of the Project S4. The primary objective is the completion of the catalogue of geological and geotechnical data of the RAN (National Accelerometric Network) recording stations of the ITACA database to allow their site classification. To this aim RU6 has gathered, analyzed and elaborated especially data related to geotechnical information, including physical, mechanical and dynamic properties of the stations ubsoil. Collected data were then used to upgrade Stations Monographs summarizing all the information in a specific section titled **Geotechnical & Geophysical Information**. Following the L'Aquila earthquake, strong effort was also devoted to the characterization of the stations located in the epicentral area by means of *ad hoc* geophysical down-hole tests.

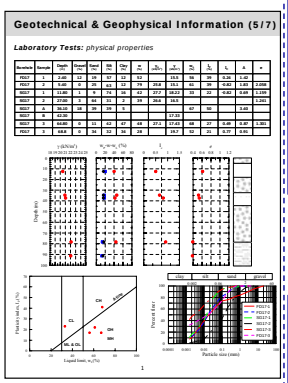
STATION MONOGRAPH:
Geotechnical and Geophysical Information
Recording Station: MERCATO SAN SEVERINO

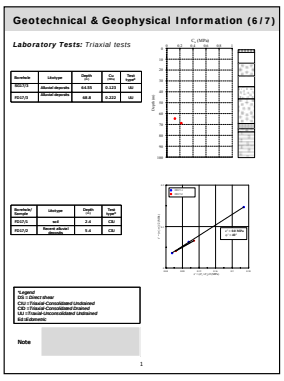


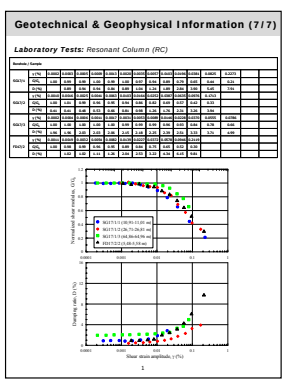






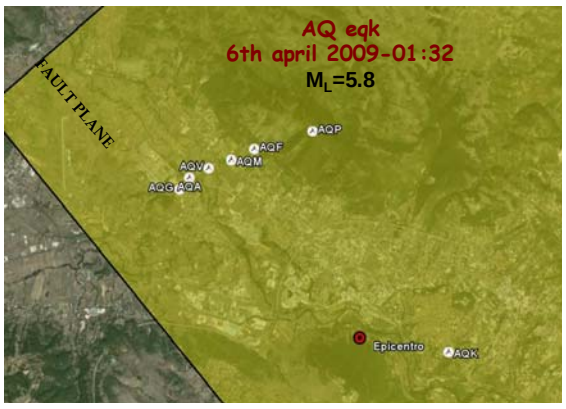


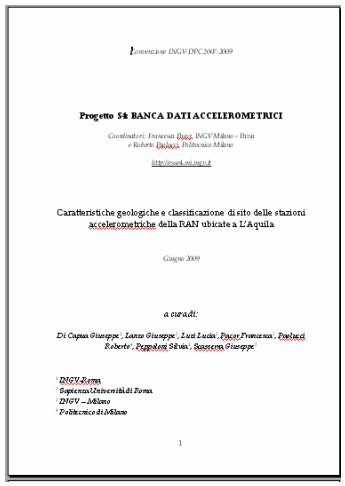




CHARACTERIZATION OF RAN STRONG MOTION STATIONS IN THE EPICENTRAL AREA OF THE APRIL 6th, 2009, L'AQUILA EARTHQUAKE (M_W=6.3)

The April 6, 2009 Mw=6.3 L'Aquila earthquake caused a main change in the compilation activity. The compilation of the monographs related to No 57 stations that recorded the mainshock has been started. The collection of existing information concerned the subsoil underneath L'Aquila historical center and the upper Aterno valley where most of the stations of the epicentral area are located. The No 57 forms were compiled and are being to be uploaded on the ITACA Database. Particular attention was devoted to the seven stations in the epicentral area (AQG, AQA; AQV, AQM, AQF, AQP, AQK) for which mainly surface geology and H/V measurements were utilized for a first classification specified in a report delivered two months after the mainshock. The recordings obtained by the aforementioned stations are unique and particularly important for the Italian accelerometric database considering that they represent first time recorded near-field data of a magnitude Mw=6.3 earthquake.

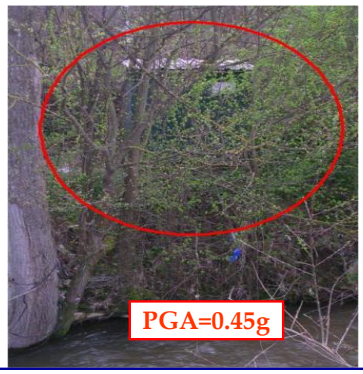




New Geophysical Testing

Among the accelerometric stations in the epicentral area, shear wave velocity profile derived from cross-hole test was available only for station AQV. Considering the relevance of the data, in order to improve site characterization of the accelerometric stations, direct measurements of shear wave velocity by means of down-hole tests were carried out. Two borings logs recently drilled by DPC (Department of Civil Protection) in proximity of the stations AQA and AQK were used to this aim. The depth of boring logs is 32 m and 53 m in AQA and AQK respectively. Data elaboration is still in progress.

RAN accelerometric stations in the epicentral area were DH tests were carried out by UR6 (processing ongoing)

AQK

AQA