

SUPSI

SoLiTe Soil Liquefaction Test

The problem

In civil engineering the knowing of the soil conditions during the design and the re-condition of architectural artifacts is extremely important. The information about water content in soil is indispensable in order to establish the soil liquefaction risk especially in sites that present a risk of seismic occurrence. A correct and reliable underground analysis is therefore mandatory in order to correctly design the building fundamentals to increase the security.

The project

The goal of the project is to develop a new measurement methodology and to design the relative electronic and mechanical instrumentation. The system is based on the

interaction between microwaves and water to determinate the soil water content allowing the measurements in various soil conditions such as areas composed by different materials at different water content. The project, for the academic party, is the result of the collaboration with the DACD department.

The result

The result is a portable measurement system composed by a couple of probes (antenna) that can be lowered in common boreholes up to 70m of depth. The instrument is able to determine the water content of the analyzed underground areas and to estimate the water/soil ratio in the case of water saturated soil conditions.

Contact information

Andrea Salvadè
andrea.salvade@supsi.ch

Funding agency

Commission for Technology and Innovation CTI

Partners

Lombardi SA
Smartec SA

Research domain

- 3 Innovative products and processes
- 5 Intelligent systems for knowledge and communication

