Innogeo Subsoil and Structure Imaging

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DETECTION OF UNDERGROUND CAVITIES

Microgravimetry, GPR, electromagnetism, MASW, tomography (electrical and seismic)

GEODETECTION OF UNDERGROUND STRUCTURES AND NETWORKS

GPR, electromagnetism, magnetism, radiodetection...





TESTING, MESURES AND CONTROL OF WORKS

Vibration, Parallel Seismic Test Method...

INVESTIGATION OF RAILWAYS AND ROADS

GPR and structural radar, microgravimetry, MASW...





GEOPHYSICAL STUDY OF SITES AND STRUCTURES

Seismic, electrical, GPR,

electromagnetism, magnetism...

DETECTION OF STEEL IN CONCRETE

Structural radar, Ferroscan

GEODYNAMIC PARAMETERS (EUROCODE 8)

Cross-Hole, Down-Hole, MASW, H/V Testing



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Ground Penetrating radar uses the reflection of radar pulse in the underground to search for underground cavities, structures and networks at low depths (0 - 3 m), notably in application of the French decree "DT-DICT".

Microgravimetry measures anomalies of Earth's gravity field to detect and locate cavities and decompression zones in the ground, up to a depth dependent on the size of the cavity (0 - 30 m).

Seismic refraction and seismic tomography ASI propagation properties of seismic waves to geologically characterise the subsoil (0 - 100 m).

Electrical resistivity tomography is a method used to visualise subsoil resistivity, and so characterise geologically and hydrogeologically the subsoil (0 - 100 m).

Electromagnetic method (EM31_EM34) allow us to map out variations in subsoil conductivity to search of karsts, sand and gravel lenses, faults, and to characterise geologically the underground (0 - 60 m).

Cross-Hole and Down-Hole (0 - 100 m) and MASW

(0 - 30 m) testings aim at determining shear wave velocities (S waves) to assess the seismic risk (Eurocode 8 - classification of sites depending on Vs30). MASW tests are also used to search for cavities and soil decompressions (0 - 15 m).

High-frequency structural radar detects steels in concrete, allowing the characterisation of concrete or masonry (0 - 0.50 m). Ferroscan is also used (0 - 0.20 m).

Vibration measures aim at studying and controling vibrations due to works, industry, road and train traffic... and that affect sensitive constructions, structures and fittings.

The Parallel Seismic (PS) test Method (NF P 94-160-3) aims at determining the length of existing foundations or pile-planks as part of restructuring, demolition works or disorder diagnosis.

MATCH BETWEEN PROBLEM AND GEOPHYSICAL METHOD









