

TRIDIMENSIONAL MODELING OF THE ALLUVIAL DEPOSITS UNDERNEATH DOWNTOWN GENOA (ITALY): HYDROGEOCHEMICAL IMPLICATIONS

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The conformation of substratum underneath the City of Genoa (Italy) was reconstructed stemming from stratigraphic data of about 2000 exploration wells, vertical electrical soundings, archaeological excavations and surface geology. 3D modeling on a restricted portion of the investigated area of particular hydrological interest (3 km x 2 km) was carried out through UNCERT software modeling.

Hydrogeological properties were associated to 6 classes of materials constituting the alluvial deposits and to the underlying aquitard and aquiclude formations, and hydraulic flow models were implemented by MODFLOW and MODPATH codes. Coupling of the flow models with discrete geochemical data on local groundwaters allowed to assess the general hydrogeochemical behavior of the aquifer and its vulnerability.