Session title

Progressive advances in urban hydrogeological processes

Description

Global urbanization is the dominant phenomenon of our time, and sustainable urban development is now one of the greatest challenges facing the contemporary world. The urban underground plays a number of roles in the complex process of urbanization, including building development, construction of transportation routes, provision of water supply, drainage, sanitation and, in some cases, disposal of solid waste. In recent decades, progressive advances in the scientific understanding of urban hydrogeological processes and groundwater regimes of a substantial number of cities have been documented. This wide range of underground challenges that cities must face lies at the heart of the sustainability of the urban water cycle. This is threatened by the increasing scale and downward extension of urban underground constructions, including utilities (cables, sewage, drainage), transportation (tunnels, passages) and storage (cellars, parking lots, thermal energy). The cumulative impact of this underground congestion on the surrounding geology, and in particular on the groundwater system, needs to be persistently studied.

Keywords

Urban hydrogeology, urban water balance, groundwater infrastructure interaction, groundwater modelling, urban geothermal energy, groundwater quality, remote sensing, geospatial analysis, urban soils.

Session Chair

Jane Dottridge

Conveners

Francesco La Vigna
Stephen Foster
Klara Zagar
Radu Gogu