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Mineral and thermal water

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Hydrogeochemical characteristics of mineral and thermal waters

title: Hypogene karst development in a hydrogeological context, Buda Thermal Karst, Budapest, Hungary

author(s): **Anita Erőss**
Eötvös Loránd University, Budapest, Hungary, anita.eross@gmail.com

Judit Mádl-Szőnyi
Eötvös Loránd University, Budapest, Hungary, madlszonyi.judit@gmail.com

Anita É. Csoma
Shell International E&P, Rijswijk, Netherlands, anita.csoma@shell.com

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Europe's largest naturally flowing thermal water system is exposed in Budapest, Hungary. The springs and wells that supply the thermal baths of Budapest discharge from a regional Triassic carbonate aquifer system. As the result of the interaction of discharging waters, extensive cave systems has developed and still developing today. These caves belong to the group of hypogene caves, based on their special morphology (spherical cavities, corrosion niches) and peculiar mineral assemblage (abundance of calcite).

A comprehensive hydrogeological study was carried out for the characterization of processes acting today and their resulting products at the discharge zone of the Buda Thermal Karst. Methods included hydraulic, hydrogeochemical, mineralogical investigations.

Among the results of the study, several processes were identified which can be responsible for cave development and formation of minerals. Furthermore, the role of the adjacent sedimentary basin was reevaluated. These results bring a new insight into the processes acting at a regional discharge zone which could be responsible for hypogene cave development. The Buda Thermal Karst system can be considered as the type area and in same time the modern analogue for hypogene karsts.

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