



Hydrogeophysical approach for the study of groundwater resources and hydrogeological features of a carbonate aquifer (Muro Lucano Mounts, Basilicata, Italy).

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The proposed work is about the geophysical survey applied on a carbonate aquifer to improve the hydrogeological knowledge. The optimal characterization of a groundwater resource is the conditions necessary to achieve the best location of a exploitable pumping hole. In order to characterize an exploitable aquifer, it is necessary to define the best hydrogeological model which necessarily must be supported by a lot of geological and hydrogeological data. Therefore, the integration between detailed geological data and indirect information is one of the best way to improve the groundwater model of an aquifer.

This work summarizes the hydrogeological knowledge of the area of Muro Lucano village (Basilicata region). This area is characterized by the presence of an interesting karst aquifer which is made up by a carbonate ridge (Castelgrande – Muro Lucano) that tectonically dips southward and is widely covered by Pliocene deposits (sands and conglomerates), by the Argille Varicolori formation and by debris slope and landslide deposits. Besides the assessment of the complex hydrogeological framework of the area, also a balance of the groundwater resources has been carried out and, by the use of an innovative geophysical technique, a zone which is potentially suitable for the exploitation of the groundwater has been localized.