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# Hydrogeophysical Parameters Estimation for Aquifer Characterisation in Hard Rock Environment: A Case Study from Yaounde, Cameroon

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## ABSTRACT

Detailed local geological and hydrogeophysical investigations were carried out for the aquifer in Yaoundé, Cameroon to delineate the architecture of different subsurface geological horizons using lithologs and generated vertical electrical sounding (VES) data. An attempt has also been made to estimate aquifer transmissivity from resistivity data. The transmissivity of the uncon?ned aquifer was computed by determining the Dar-Zarrouk parameters (longitudinal unit conductance and transverse unit resistance) and were compared with the actual field transmissivity. The results showed a direct relation between aquifer transmissivity and transverse resistance. The relationship established has therefore, been generalized in the study area in order to evaluate hydraulic conductivity and transmissivity at all the points where geoelectrical measurements have been carried out. This generalization allows one to derive maps of the product K$\sigma$ and transmissivity in the study area based on geoelectrical measurements. These maps are important in future modelling processes oriented towards better exploitation of the aquifers.

## KEYWORDS

Hydrogeophysical; Transmissivity; Hydraulic Conductivity; Yaounde

## Cite this paper

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