

## **Geoelectric study of aquifer system. Case of localities of Dabakala (North of Ivory Coast)**

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This work aims to study the geometric characteristics of basement aquifers, from electrical geophysics, in order to determine their hydrogeological functioning. This study is being conducted in some localities in Dabakala (northern Côte d'Ivoire), where access to drinking water is most often problematic. First, it consists to identify the fracture networks and the weathering profile of the basement, from the parallel profiles of resistivity and from the interpretation of the electrical sounding curves, respectively. Then, to study at the local scale, the geometric characteristics (weathering thickness, orientations, dip and depth of fractures) of the aquifer system. Finally, to study the hydrogeological functioning of these aquifers. The latter consists in relating, firstly the position and the orientation of the fractures with the existing watercourses and, on the other hand, the depth of the fractures observed on the curves of sounding with that of the water arrivals in the existing drillings. The analysis of parallel profiles highlights several lines of fractures of various orientations. These are in conformity with those met in the basement of the Dabakala department. The NE-SW and NW-SE accidents are the most represented and correspond to the Birimian and Liberian directions, respectively. NS and EW fractures are also identified. These geological accidents show a subvertical dip and in their extension intersect streams near the prospected zones. Their functioning is therefore linked to that of surface water. Electrical soundings have shown that the thickness weathering rarely exceeds 20 m. The depth of fractures identified with the electrical soundings correspond to the different water arrivals observed with the previous drillings.

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