Contribution of Geophysics to the Characterization of the Basaltic Formations Application to the Rommani Area, Morocco

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In the Rommani volcanic area, the rainwater infiltrates until their retching to the impermeable level which generally corresponds to the crystalline basement. The role of the basaltic formations in the field of hydrogeology is much diversified; indeed, when they are in contact with a very to impermeable substratum they are used as drains, and when they are directly on the permeable formations, they do not contain any water traces because of their strong permeability. The better geophysical method used in the hydrogeology of the volcanic grounds is the electric prospecting which provides vertical cuts of the electrical resistances. It is then possible to quantify the hydrous potentialities of the basaltic formations, to determine the geometry of these aquifers, and the variation basaltic thicknesses. Our study comprises 15 electric surveys and two surveys of calibration. The electric surveys carried out in the area, allowed the recognition of the geological formations and the determination of the space geometry of the aquifer. The results of interpretation have leads on the one hand to the electric definition of the various formations; it is about the top downwards of altered basalts ?=170Ωm compact basalts ?=560 Ωm, and of the schistous basement ?=110 Ωm. The 1D modelling lead us to characterize the different layers and to the establishment of an interpretative map.

Key words: Rommani, Basalts sub-levelling, hydrogeology, geoelectric prospecting, resistivities