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**Etude géophysique de la prolongation orientale de quelques structures liées au Mormont (VD)**

The Mormont is a faulted anticline of Cretaceous limestone of the jurassic domain. This complex horst structure dominates the Molassic Tertiary plain and disappears from view in the northeast due to a transverse fracture, the « Cristallin fault ». The strong resistivity contrast between the Secondary limestone and the Tertiary sandstones allows the application of the audio-magnetotelluric method (AMT) by vertical soundings and 8 Hz resistivity profiling. With this method, the prolongation of the structure and the plunge of the axis can be followed over 6 km towards the northeast. The results of a quantitative interpretation with 1D modeling are in good agreement with geological and drill hole data of the 1963 Essertines oil well. The southeastern continuation of the « Cristallin fault » was studied using eleven different geophysical methods carried out on two test profiles. Resistivity and electromagnetic conductivity methods give the best results and clearly delineate the boundaries of the fracture zone covered by Quaternary deposits. Other geophysical methods such as VLF (tilt angle) and magnetics lead to more ambiguous responses, depending above all on variations of the overburden thickness.

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