ACTIVE FAULT IN KHERRATA

Djamal MACHANE
Dr., CGS, Algiers, Algeria
machanedjamel@yahoo.fr

Rabah BENSALEM
Dr., CGS, Algiers, Algeria
rabah63@gmail.com

Hakim MOULOUEL
Dr., CGS, Algiers, Algeria
ifp78@yahoo.fr

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The valleys are often located along major faults, the rocks are being weakened and more vulnerable to erosion. Rivers therefore generally follow those areas of weakness. This is the case of the valley where the Kherrata fault follows the west side of the valley in which grow quaternary terraces, already reported by Gabert (1984). Quaternary Kherrata Fault is a bit south of the break in slope between the Jebel Amar Redou (Figure 1) of the valley. This can be explained by the creation of new branches, which generate the main flaw. However, field work show a fault with a striated plan outlining all directions, since those strike-slip to those with pitches of 90 °. The recent game this flaw does not seem to express the surface and it is probably a blind fault. Besides, Rothe (1950) who showed for the first time, talks about fold-fault, like the fold-fault Sahel highlighted by Meghraoui (1988). This structure Kherrata would be a of neotectonic displacement inherited from the ante-Neogene accidents. At Jebel Takoucht, rupture length of over a kilometer affects its northern flank.

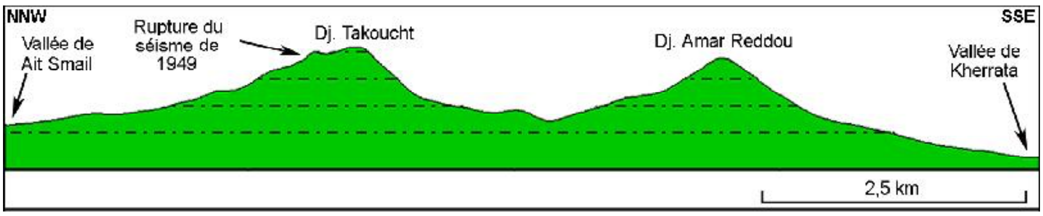

Figure 1. Topographic profile through the Jebel Takoucht, Jebel Amar and Reddou Valley Kherata

Kherrata fault also called Kherrata fold-fault (Rothé, 1950) is in the Babors mountains at Kherrata (Figure 2), it marks the beginning of the plain. It is a NE-SW plunging northward fault. This fault has a dip steeply to the north at this point, showed streaks vertical pitch (90 °). According to Rothe (1950), this fault is responsible of 1949 Kherrata earthquake (Gabert, 1984) that believes that the creation of volumes in the mountainous region Kherrata is recent and may still be in progress during seismic events . Indeed, the region has experienced several earthquakes in Babors recent decades. After Our field surveys in the Kherrata region, we were able to find evidence of recent tectonic deformation. Indeed, at the Kherrata sandstone, training conglomeratic recent show dips to the south at about 30 °. A more recent layered formation, which is probably the recent Quaternary, also shows the same dip to the south, but with a slightly higher value.

To know the geometry of this fault at depth, we conducted a geophysical electrical imaging device perpendicular to the fault.

Figure 2. Kherrata Fault at Jebel Amar Reddou. We see very clearly in the picture streaks near the vertical of the overall ENE-WSW oriented fault

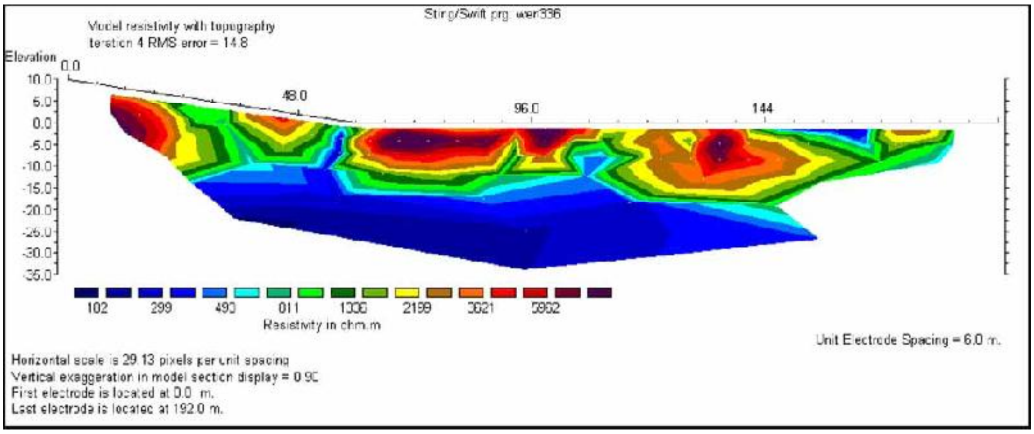

Figure 3. Perpendicular geophysical profile of the fault Kherrata near Amar Reddou

The geoelectric profile made perpendicular to the Kherrata fault presents a contrast showing a very local drop in the electrical resistivity values, just at the break of slope. The separation plane (at the break in slope) of these two values of electrical resistivity shows a north dip with a high value of embedding surface and weakens at depth. This separation is on the ground segment of the Kherrata fault passing the foothills of Jebel Amar Reddou. We suggest that the fold-fault highlighted further south is the active branch of the fault Kherrata highlighted further north by Rothe (1950). This branch we see as responsible for the earthquake of 1949, would take turns towards the so-called Kherrata fault of Rothé. The maximum credible earthquake for this fault is Mw = 7.3. This study demonstrates the interest of the geological study in the context of prevention related to the earthquake engineering.

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