



Neotectonic deformation in Tunisia (North of the African plate)

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In Tunisia, at the extreme North of the African plate, the neotectonic context is largely influenced by the Eurasia-Africa convergence. The aim of this work is to characterize the neotectonic regime that affected this region during Quaternary. Field work investigations integrated with published data allowed to evidence a spatial-temporal variation of the tectonic stress regime during this period.

The spatial repartition of the different types of Quaternary to historical deformation shows a North-South neotectonic zoning in Tunisia. After lower Pleistocene, the Tellian domain (Maghrebides) in the North and its Atlasic foreland in central Tunisia are affected by NNW-SSE compression. It generated E-W to NE-SW folds and reverse faults, well developed in the Plio-Quaternary molassic basins of Kechabta and Jendouba (Northern Tunisia). In the Atlas, the major E-W and N-S pre-existing faults have been reactivated with dextral and sinistral strike-slip kinematic respectively, associated to en-echelon folds (Kasserine, N-S Axis, Northern Chott belt...). After the Tyrrhenian, a submeridian compressional regime affected Northern Tunisia (e.g., Bizerte region) and was responsible for the E-W folding of marine strata. More to the South, in the Tunisian Sahel, transtensional tectonics with a NW-SE horizontal maximal compression (SHmax) deformed the Tyrrhenian marine series (Khénis, Skanès, Monastir. . .). During the Holocene and up to present-day times, N-S compressional tectonics reactivated the E-W pre-existing faults with a reverse movement in Northern Tunisia (Bulla Regia, Utica . . .), generating historical earthquakes. In Central Tunisia, the Aqueduct of Cherichira (built around AD 850) is displaced by a N-S normal fault. Similarly, a mosaic of a roman house is shifted by 10 cm, along a N-S sinistral normal fault. These deformations evidence a transtensional tectonic regime.

During the Quaternary, all the NW-SE oriented grabens are subsiding (e.g., Bizerte Lake, Grombalia, and others in central Atlas). They can be explained by the coexistence of extensional and compressional structures in a general compressional tectonic regime with NNW-SSE SHmax.