

Jurassic Basins of Agadir-Essaouira: Post-Rift Evolution of an Atypical Passive Atlantic Margin (Atlantic Atlas, Morocco)

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The coastal basins of west Moroccan Atlantic passive margin, between Agadir and Essaouira are located on the western part of the Moroccan High Atlas. The post-rift evolution of this Atlantic margin part is atypical, it is characterized at the same time by thermal subsidence, tectonic and halocinetic activities.

The Bajocian - Bathonian red beds of the Amskrout formation are affected by NNE-SSW to NE-SW normal faults. At the top of this succession, basic lavas and doleritic sills, dated from 156 ± 7 My and with transitional affinity, were installed in an intraplate geodynamic context. A phase of hydrothermal alteration marks also this period; it is of propylitic type in the Agadir atlasic basin and phyllitic in the microdiorites of the Massif Ancien. These tectonic and magmatic activities are sealed by oolitic limestones of the Ouanamane formation whose base is of later Bathonian age.

From the Callovian - Oxfordian until the top of the lower Kimmeridgian, the carbonate platform evolution is controlled at the same time by the thermal subsidence of the Atlantic margin and by the movement of the atlasic transverse faults. This new structuring, within a ENE-WSW to E-W transforming zone, individualized the Agadir, Essaouira and Haha coastal basins. These basins are structured by NE-SW, ENE-WSW, E-W and ESE-WNW anticlinal ridges, which delimit depressions with the same orientation. This structural architecture of losangic form, controlled by parallel and transverse faults with the Atlantic margin, caused in the margin a preatlasic structuring, and was preserved during the cretaceous basins evolution with a first positive inversion at Maastrichtian times. The structural evolution of the Agadir-Essaouira coastal basins is characterized by an interference of atlasic structures in a passive margin geodynamic context.

Key words: Jurassic basins, post-rift, passive margin, thermal subsidence, magmatism, atlasic orogenesis.