

The Paleozoic Geodynamic Evolution of Reggane Basin (Algeria)

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Avenue du 1er novembre, BP 68M Boumerdès 35000 Algérie The Paleozoic pericratonic Reggane basin is located in the South Western part of the Algerian Sahara platform. It is a dissymmetric depression, oriented NW-SE. The geological events are clearly distinctive in time and space.

Sedimentation stage: The Reggane basin is formed at the Cambrian with 5166m thick in its principal depocenter. Extremely reduced at its south border, the thickness does not exceed 1800m. The sedimentary deposits are essentially sandstones and shales, affected by dolerites, interbedded in the Fammenian and Visean formations.

Two important tectonic subsidences occurred with 1100m thick, during the Eifelian- Fammenian period and 450m thick in the Visean period.

Structuration stage: From Cambrian to Silurian period, the Reggane basin displayed the same paleo-geodynamical evolution as in the surrounding basins.

The Post- Silurian period (early Devonian – early Carboniferous) is characterized by a distensive tectonic event creating another basin, oriented NW-SE, named Sbaa, located in the north east of the Ougarta- Kahal Tabelbala horst. Associated to these sedimentary basins, some epirogenic movements are observed in the south border of the basin, affecting the lower Paleozoic series, responsible of the fifth intra-Paleozoic unconformities.

During the Middle and the Upper Carboniferous time, a compressive event occurred, corresponding to the Hercynian phase. This tectonic phase was responsible of the actual architecture, such as rejuvenation of the normal faults inherited from the Cambrian extensive tectonic, migration of the depocenter axis from the North (Devonian-Carboniferous) to the South (Upper Carboniferous), uplift and the upthrust of the Ougarta horst toward the South West, and at last, formation of positive flower structures, with a submeridional direction.

Key words: Reggane, compressive, geodynamic, Paleozoic, subsidence.