

## **The Calciturbidites of the Lower Aalenian-Bajocian in the Northeastern Middle Atlas: Sedimentary Organization and Geodynamic Context**

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In the northeastern Middle Atlas ("ride anticline of the Jbels Haloua-Richa – Kebibicha") during lower Aalenian-Bajocian, morpho-structural differentiation in "rides" and "depocentres" are clearly expressed by a calciturbiditic sedimentation, characterized by the generalization of the gravitating deposits of slope and bottom of slope, materializing the repetitive phases of progradation in relation to the periods of marine fluctuation.

In the basal Aalenian-Bajocian ("Calcaires à Cancellophycus"), the predominance of this chaotic sedimentation ("calciturbidites") giving breccias (debris flow) and slumps where the last ones of biotrititic, oolitic and encrinitic accumulations are intercalated, with broken and used elements. These resedimented deposits, mark filling partial of the mediums, and testify to shallow platform with emerged and eroded feeding the furrows in allochthonous material, which explains the mixture of littoral facies and basin. Allochthonous fauna is consisted a mixture of benthic and pelagic forms. The sedimentary organization reveals a succession of three sequences of deposits (SDAa1, SDAa2 and SDAa3) composed by dissymmetric parasequences showing slumps and nodular limestone, characterizing the shelf margin system tract (SMST); the transgressive system tract (TST) is constituted by marls and marl-limestones to ammonites, and the highstand system tract (HST) constituted by a black limestones in Cancellophycus (Zoophycos).

In lower Bajocian ("Marnes de Boulemane"), the gravitating deposits, constitute an exceptional indicator of the phases of marine fluctuation, especially in overall transgressive period. They define atypical sediments which materialize of the changes or a "blocking" of the sedimentary processes, probably of a climatic or tectono-eustatic nature. Cyclicity of these allochthonous sediments "prograding" coming to interfere the "retrograding" sediments autochthonous. Their identification, defines a remarkable sequential setting (SDBj 1, SDBj2 and SDBj3) in the formation of the "Marnes à posidonies".

Key Words: Middle Atlas - Aalenian- Bajocian - Calciturbidites - Sequences deposits.