The Ordovician of South- Western Anti- Atlas, Morocco: Depositionnal Systems and Control

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The sedimentological study of Ordovician (Trémadocian - Ashgillian) successions of South Western Anti -Atlas (Zini and folded Bani) based on sedimentary facies reconstruction, petrographic composition analysis and sequence stratigraphy, allows to identify the depositional systems, the nature of the sediments and the sources and the factors that control the sedimentation.

During the Lower and Middle Ordovician the sedimentation occurred in a shallow siliciclastic epeiric sea under the control of the subsidence and the sea level fluctuations. The sediments are mostly silicilastic from the panafrican belt and it's old cover, with minor intercalations of bryozoan mounds, carbonates and oolithic ironstones (intrabasinal sources). They accumulated in various sedimentary environments:

tide dominated littoral during the Tremadocian,

fluvial currents, waves and storms dominated deltas and storms dominated shelf (upper Fezouata Formation) and storms and tides dominated shallow shelf (Zini Formation) during the Arenigian,

storms dominated delta, storms dominated offshore, tide dominated littoral and carbonate platform with Bryozoan mounds during the Llanvirnian,

storms dominated offshore and shoreface and tide dominated littoral during the Llandeilo.

During the Upper Ordovician the sedimentary basin was still a subsiding shallow siliciclastic epeiric sea. But the glacial climate induced eustatic sea level fluctuations and controlled the rate and the nature of the sediment supplies. The siliciclastic sediments derived from the panafrican belt and it's old cover and transported by cold wind and glaciers were accumulated in:

storms dominated offshore and tides dominated shelf and littoral during the Caradoc,

macrotidal estuary, tidal flat and deltas during the Ashgill

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