



Plio-Pleistocene stratigraphic architecture of the Eastern Niger delta

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The dynamic of large passive margin deltas is a key issue to constraint both: (1) the geometry, size, temporal and spatial distribution of sedimentary reservoirs (from continental/fluvial to turbiditic systems) and (2) the long term topographic evolution of the African continent because they record the terrigenous sedimentary supply resulting from relief evolution on the continent.

We undertook a regional analysis (based on 2D/3D regional seismic and well logs) of the eastern Niger delta to establish the Plio-Pleistocene stratigraphic architecture of the whole sedimentary system from the continent to the deep sea plain. We characterized the stacking pattern of depositional sequences from the temporal and spatial evolution of the off-lap-break. We interpret system tracks in term of depositional profiles and calibrate depositional sequences in absolute ages (from biostratigraphy). We identified 2 orders of sequences: elementary sequences stacked into million-year scale sequences. The eastern part of the delta shows a maximum of progradation during the Gelasian followed by an aggradating trend (Pleistocene).

Climatic charts ($\delta^{18}\text{O}$) indicate that the aggradating trend can not be attributed to global absolute sea level fall during the Pleistocene suggesting either an increase in general subsidence or a decrease in the sedimentary supply at that time. We are currently investigating the respective contribution of eustasy, regional and local deformation and the sedimentary supply (drainage area evolution) to the general dynamic of the delta, as well as, their consequences on the temporal and spatial distribution of

depositional environments and reservoirs.