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The Vembo Shales (Republic of the Congo): new insights on the transition from lacustrine to marine settings in the South Atlantic

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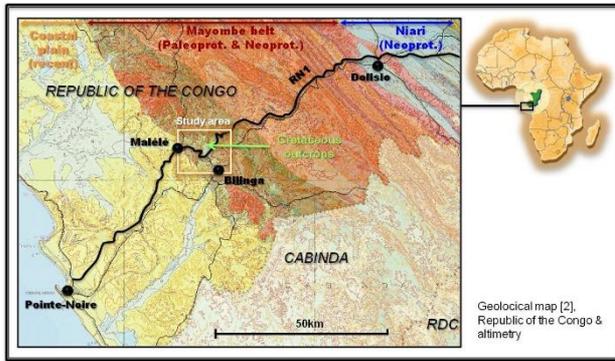
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The Vembo Shales, originally defined in Gabon, are also recorded in Congo where they are recognized as the “terme argilo-carbonaté”[1]. This member of the Chéla Formation (Aptian), deposited just below the evaporites of the Loémé Formation, was recently identified in outcrops located 70 km to the NE of Pointe-Noire (Fig. 1) along the National Road 1 (RN1). These outcrops were not stratigraphically well-constrained due to the lack of fauna and were previously attributed [2] to undifferentiated Cretaceous (Fig.1) based on facies characteristics that are similar to succession exposed in outcrops in Gabon.



The fossil content (e.g. wood, palynomorphs, ostracods), structural and sedimentary features, as well as geochemical biomarkers were analysed to better assess the depositional context of the Vembo Shales. Additional subsurface data, from onshore to conventional offshore, were also integrated.

*Figure 1: Location map of the Vembo outcrops,
Republic of the Congo*

The outcrop sections studied in Congo are stratigraphically calibrated by ostracod fauna that were not only described in Gabon [3] but also in Brazil [4, 5]. Within this constrained framework, it is therefore possible to better understand the timing of the lacustrine to marine transition in the South-Atlantic Ocean. Indeed, marine elements (dinoflagellate cysts) are recovered for the first time within the Vembo Shales, providing new evidence of a crucial environmental change. This work highlights the complexity in terms of paleogeography and paleoclimatic record of the last pre-salt units at a very specific time between rift and drift geodynamic settings in the South Atlantic.

References:

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