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ABSTRACT BOOK

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Paleo-environmental and Paleogeographic Evolution of the Alagoas Stage (~Aptian) in the NE Brazilian Interior Basins

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The local Alagoas Stage (Aptian–Albian?) represents a time interval of important environmental changes, related to the final phases of the Gondwana breakup. In the interior of the Northeastern Brazil, the Aptian only crops out in the Parnaíba (Codó and Itapecuru formations) and Araripe (Rio da Batateira and Santana formations) basins. This area is close to the continental margins that would be generated with the breakup, then occupying a key position in the understanding of the marine incursions that drastically affected the regional paleogeography (Arai, 2014). Thus, the interior basins sedimentary record can also provide relevant information about how Aptian paleoceanography was influenced by the contemporary rift systems of both Central and South Atlantic. The current study proposes an interdisciplinary approach which includes Regional Geology (paleogeographic maps and tectonic models involving basement and sedimentary sequences), Sedimentary Geology (stratigraphic infilling vs physiographic evolution of the basins), Geophysics (seismic, well logs, airborne methods), Paleontology (macro- and microfossils) and Organic Facies, aiming: (1) to propose a biostratigraphic framework for correlation of the Aptian Stage between Parnaíba and Araripe basins; (2) to understand the paleoenvironmental evolution of that basins, through the characterization of the different sedimentation scenarios, with its paleobiota and associated paleoclimates; (3) to comprehend the paleogeographic evolution of this area, contextualized in the regional tectonostratigraphic evolution; and (4) to construct a regional geological model, which can be stratigraphically correlated and compared to geotectonic models of basins along both the Equatorial and the Eastern Brazilian margins for the Alagoas Age. Preliminary results indicate that: (1) despite the Aptian-Albian age widely mentioned in the paleontological literature, palynological analyzes confirmed that the Santana Formation is restricted to the Aptian (as previously pointed out by Rios-Netto et al., 2012); (2) the early tectonic structures of the Araripe basin are represented by a NE-SW, ENE-WSW oblique fault system that follows the basement fabric; (3) dinoturbation levels were recognized and indicates potential correlative surfaces; (4) wood growing patterns were identified, which enhance the comprehension of the climatic changes during this time interval.

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