APTIAN-CAMPANIAN OF THE LUSITANIAN BASIN NORTHERN SECTOR (PORTUGAL): SEDIMENTARY CONTROLS AND PALAEOGEOGRAPHIC EVOLUTION

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In the Lusitanian Basin (western Iberian margin), the upper Aptian-lower Campanian stratigraphic record (unconformity-bounded unit UBS4) consists of non-marine siliciclastics interfingering with platform carbonates. Its lower boundary (the breakup unconformity) is a truncation over the Mesozoic (with karstification) and the Hercynian basement; onlap exists in the NE border. Biostratigraphy and palaeobiology of the marine/transitional facies and sedimentologic studies allowed detailed palaeogeographic reconstruction and assessment of the sedimentary controls balance. Within the long-term eustasy and thermal subsidence, the sequential evolution is controlled by short-term eustasy, minor tectonics (including halokinesis) and possible intraplate stress changes. The west Galicia breakup (late Aptian) generated thermal and isostatic uplift of the north-eastern Hesperian Massif, inducing erosion of deeply weathered granites and metamorphic rocks. Braided fluvial systems drained south-westwards into deltaic systems connected with a carbonate platform. Long-term Albian-Cenomanian transgression allowed the widespread deposition of carbonates, initiated by tidal flat/lagoon sandy marls and limestones followed by shelf limestones with ammonites (transgression maximum) and subsequent regressive facies with rudist and coral buildups. A long-term sea-level fall resulted in progradation of the depositional systems and later fluvial incision (reaching 100m at the NE of the basin). A well developed silcrete occurs at the top of the siliciclastic record, indicating a long subtropical weathering (early Campanian ?).