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SHALLOW TO DEEP MARINE CRETACEOUS PALAEOSETTING IN THE NW BLACK ONSHORE AND OFFSHORE

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In the NW Black Sea onshore of southern Romania, within the S Dobrogea region, part of the Moesian Platform bordered towards E by the Black Sea, the Cretaceous Period is predominantly characterized by a marine sedimentation. Several palaeosetting changes, from a shallow to a deep marine deposition, are pointed out, based on the study of outcrops and boreholes, some of them located offshore. During the Early Cretaceous, the area was enclosed in a carbonate platform. The sediments of the Berriasian-lowermost Aptian interval are marly limestones, oosparites, sandy clays, limestones and reef buildups of patch-reef type, with rich macrofaunas, i.e., ammonites, bivalves and brachiopods (Avram et al., 1993). Very scarce assemblages of benthonic foraminifers and nannofossils are also present. Within the Lower Cretaceous, a modification is marked by the transgressive upper Valanginian, when a deepening event took place, expressed by the occurrence of marls, clays and limestones, containing calcareous nannofossils of Tethyan and Boreal origin (Melinte and Mutterlose, 2001) and planktonic foraminifers.

From the lower Aptian, a fluvial-lacustrine palaeoenvironment was observed in several outcrops largely exposed along the Danube-Black Sea Channel and boreholes from onshore and offshore NW Black Sea. A coarse-grained channel deposition is present (pebblestones, sandstones), along with alluvial plain deposits, mainly claystones and sandstones with charophytes and ostracods (Avram et al., 1993; Stoica, 1997).

During the Cenomanian, a transgression took place, leading to the occurrence of marls, clays and glauconite-rich chalk. This facies, which frequently includes bioturbated mudstone chalk, extending to the Maastrichtian, was interpreted to represent deep-water environmental conditions.

The Cretaceous paleosetting modification pointed out in the NW Black Sea onshore and offshore mirrored the eustatic fluctuation of those times (Haq, 2014) that led to paleogeographic modifications. The effect of eustatic changes is modulated by the eurybatic ones.

References

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