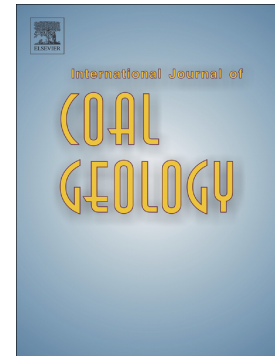


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Organic facies variability during the Toarcian Oceanic Anoxic Event record of the Grands Causses and Quercy basins (Southern France)

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Abstract

The early Toarcian is marked worldwide by major environmental changes that resulted in organic-rich black shale deposition, the Toarcian Oceanic Anoxic Event (T-OAE). This organic-rich sedimentation is particularly recorded in the Grands Causses (GCB) and Quercy (QB) basins. The main objectives of this study are the characterization, through organic petrology and geochemistry techniques, of the organic matter (OM) of the late Pliensbachian – early Toarcian sedimentary successions of these basins and the definition of the organic facies, assessing their implications in the evolution of depositional paleoenvironments.

In the GCB sedimentation occurred, during the late Pliensbachian, in a well oxygenated water body (Total Organic Carbon - TOC 0.6 wt.% and low Amorphous Organic Matter - AOM) proximal to the terrestrial source area (high terrestrial contribution) with marine influence. In the lattermost Pliensbachian a shallowing of the water column is observed with decrease of marine influence and separation from the terrestrial source area (TOC 0.9 wt.%, AOM and zooclasts co-dominate) under an arid climate (*Classopollis* ssp.). From the Tenuicostatum to early Serpentinum chronozones a restricted and stagnated environment (TOC 5.7 wt.%, AOM dominates) is implemented. From middle to late Serpentinum Chronozone the reestablishment of the oxygen levels (decrease in TOC and AOM) takes place, as well as paleoceanographic circulation patterns.

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