

# **Latest Pliensbachian–Toarcian eustatic calibration using shallow-marine sedimentological record coupled with basinal geochemical analyses**

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Sea-level fluctuation is an important parameter controlling the sedimentation in deep-marine environments and influenced also the expansion of oxygen-depleted conditions in neritic settings during oceanic anoxic events (OAEs). Despite this fundamental role, sea-level fluctuation remains on a short timescale (<1 Myr) one of the least constrained parameters for numerous OAEs. Here we refine the sequence stratigraphic framework for the uppermost Pliensbachian–Toarcian with a special focus on the Toarcian OAE interval. This study is based on sedimentological and total organic carbon isotope data used to correlate 16 sections located in the central High Atlas (Morocco). Palinspastically, those sections formed a 50-kilometer proximal–distal transect along the northern Gondwana continental shelf, which allow reconstructing the shoreline migration through time and space. Our sequence stratigraphic interpretation is then compared to the geochemical signals (e.g. detrital index, chemical index of alteration) measured on samples collected in deep-environment settings from numerous basins distributed worldwide. Our study shows that the relative sea-level changes recorded in Morocco can be correlated over large distances across those basins, indicating that the relative sea-level changes were driven by eustatic fluctuations. This study gives insights into the relationship between relative sea-level fluctuations and the geochemical record.

**Mots-Clés :** Toarcian oceanic anoxic events, sequence stratigraphy, carbonate factory shutdown, Morocco