



High-resolution sequence stratigraphic and cyclostratigraphic interpretation of a basal transgressive system tract in North-central Tunisia: the Cenomanian-Turonian Bahloul Formation

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High resolution sedimentologic and sequence stratigraphic analyses of the Cenomanian–Turonian Bahloul Formation in north-central Tunisia were undertaken to check sea level, facies and even environmental interactions. The main Sequence (Upper Cenomanian – Lower Turonian) is subdivided into seven facies evolving from platform to basin deposits. Based on stratal geometries and facies distribution patterns, it was also subdivided into shelf margin wedge (uppermost Fahden Formation – lowermost Bahloul), basal transgressive system tract (remainder Bahloul Formation) and highstand system tract (Kef Formation). The sea level rise-related Bahloul black shales display almost the same lithology that commonly occur in more than one system tract, proving that: (1) several sea-level fluctuations affected the depositional pattern and (2) analogous climatic process occurred during a short laps of time throughout the main sequence development. The Bahloul displays a climatic cyclicity of Milankovitch type that would correspond to a 20 ky precession cycle prevailing in such low latitudes during Cenomanian-Turonian transition. Cyclostratigraphic and sequence stratigraphic interpretations reveal the existence of four transgressive parasequences deposited throughout 380 ky within the Bahloul. The first transgressive parasequence (70 ky) commences by a major transgressive surface (TS), useful as correlation tool, which contains dark foliated marls rich in dwarf globular planktonic foraminifera such as whiteinellids, laminated radiolarian-rich and foraminiferal black shales, suggesting deep marine non agitated deposition pattern. The second parase-

quence (100 ky) is consisting of light marls and pseudo-laminated limestone alternation proving a short downward shift. The third one (110 ky) is composed of laminated radiolarian-rich black shales and filament-rich limestone. The last one (60 ky) is Turoanian in age and marks the transition to the argillaceous high stand system tract (HST), assigned to the Kef Formation that surmounts a maximum flooding surface (MFS).