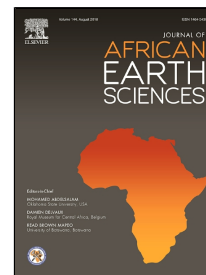


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Depositional environments and sequence stratigraphy of a mixed siliciclastic-carbonate ramp: an example from the Cenomanian to Turonian Galala Formation in the northern Eastern Desert, Egypt



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1 **Depositional environments and sequence stratigraphy of a mixed siliciclastic-carbonate**
2 **ramp: an example from the Cenomanian to Turonian Galala Formation in the northern**
3 **Eastern Desert, Egypt**

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8 **Abstract**

9 Sedimentologic, stratigraphic and ichnological data are integrated to develop a model linking
10 base-level changes to depositional evolution of a mixed siliciclastic-carbonate ramp. Two
11 consecutive depositional stages are suggested for interpreting architectural development of the
12 reported five siliciclastic facies associations (FA1 to FA5) and six carbonate facies types (FT1 to
13 FT6) in the Galala Formation. The Late Cenomanian siliciclastic-dominated stage shows
14 offshore transition and shoreface siliciclastic succession, in addition to lagoonal coastal-plain
15 deposits. The Late Cenomanian to Early Turonian siliciclastic-carbonate stage is characterized
16 by alternating offshore mudstone and carbonate facies types deposited in outer / distal middle
17 ramp to proximal middle / inner ramp setting. Two third-order depositional sequences (DS1 and
18 DS2) are defined within the Cenomanian to Turonian succession. The recognized sequence
19 boundaries (SB1, SB2 and SB3) correspond to the global Cretaceous eustatic curve as well as to
20 counterparts in Egypt, Jordan, Tunisia and American / European basins. The SB1 surface
21 signifies subaerial exposure that was followed by early Late Cenomanian transgression and
22 deposition of siliciclastic-dominated strata of DS1. Subsequent Late Cenomanian base-level fall
23 resulted in generating the sequence boundary SB2. The SB3 surface coincides with Middle

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