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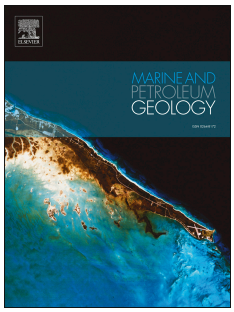

Reply to the comment of Anan et al. on "Palynological, palaeoenvironmental and sequence stratigraphical analyses of a Turonian-Coniacian sequence, Beni Suef Basin, Eastern Desert, Egypt: Implication of *Pediastrum* rhythmic signature by Tahoun et al. (2017) Marine and Petroleum Geology 88 (871–887)"

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Abstract

Herein, we reply to the allegations made by Anan et al. (2018) who claimed that the rhythmic signature of *Pediastrum* originally recorded and interpreted for the first time by (Tahoun et al. 2017), is a simulation of the work of El Atfy et al. (2017). This is not possible because we submitted our manuscript (which comes from an earlier version previously submitted to JMPG) almost simultaneously with the online publication of El Atfy et al. (2017); therefore, we had no chance to incorporate their work. Anan et al. (2018) raised such claims, because we provided scientific criticism to El Atfy et al. (2017) and did not follow their work blindly. Moreover, our work has different aims and approaches with respect to those used by El Atfy et al. (2017).

Our main idea was to study and explain how the vertical cyclic signature of *Pediastrum* is connected to sea level cyclicity and to use this vertical stratigraphic signature in paleoenvironmental and sequence stratigraphic interpretation. This aim was not tackled before by Brenac and Richards (2001) and El Atfy et al. (2017). Moreover, our work was based on palynological, geophysical and lithologic data, not on mineralogical data as made by El Atfy et al. 2017. In our paper (Tahoun et al. (2017) we decided to discuss the work of El Atfy et al. (2017) because they tried to relate *Pediastrum* to regressive sequence systems. We found their work has several scientific mistakes that would raise much scientific controversy and lead to unsubstantiated conclusions. In our opinion, El Atfy et al. (2017) did not use reliable data and failed to provide proper scientific evidence to their conclusion. Following El Atfy et al. (2017), Anan et al. (2018) related an alleged acme of *Pediastrum* to regressive systems tracts, without providing any quantitative evidence of the acme and/or making a sequence stratigraphic analysis of their studied sections. Not surprisingly, the failure of Anan et al. (2018) to provide any quantitative data to support their alleged acme reinforces our argument that their study was not based on genuine data.

Moreover, Anan et al. (2018) tried to flatten the conclusion made by Tahoun et al. (2017) by underestimating its sounding *Pediastrum* rhythmic signature-based results. Anan et al. (Op. cit.) also tried to bend the clear fact that our ideas differ from that of El Atfy et al. (2017) to look as it was their own, which is not true. Therefore, we encourage the palynologists community to read critically the work of Tahoun et al., (2017) and the work defended by Anan et al. (2018) and their allegations to confidently scrutinize the aims, data quality, and approaches presented therein to come up with an independent judgment. A detailed reply to allegations and comments of Anan et al. (Op. cit.) are handled in the forthcoming sections.

Keywords:
Pediastrum; Sequence stratigraphy; Upper Cretaceous; Egypt