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Cyclicality and eustatic control on the Upper Jurassic (Kimmeridgian) – Upper Cretaceous (Cenomanian) carbonate peritidal deposits of the Fele area (Western Taurides, Turkey)

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The study area which is located at the northern end of the Beyêehir Lake at the Western Tauride of Turkey is characterised by Upper Jurassic (Kimmeridgian) - Upper Cretaceous (Cenomanian) peritidal carbonate succession. Frequently recorded karstic breccia horizons within the studied succession correspond to major subaerial exposure events on the platform. Within the chronostratigraphic framework established by micropaleontologic studies, magnitude of time gap at these boundaries is below the resolution of biostratigraphy. These karstic breccia horizons correspond to third order sea level fall records and are interpreted as sequence boundaries. Shallowing –upward meter-scale cycles between sequence boundaries form main building blocks of the succession. According to microfacies associations, types of sedimentary structures and the structures at the bounding surfaces of the beds, meter-scale shallowing – upward cycles (parasequences) and third-order sequences are identified and analysed. Along the studied section, measuring 520 m in thickness, 278 shallowing-upward meter-scale cycles are counted and the average

thickness of each cycle is about 1.5 m. Within the individual cycle, in the transgressive phase, algal coated lag clasts, mollusk or ostracod accumulations, intraclasts are recorded at the bottom of each cycle as the record of marine flooding surface. By the continuation of sea level rise, in the subtidal facies, bioturbation, keystone vugs and ooids are recorded as structures of increasing water column and energy. Intertidal and/or supratidal facies take place at the top of the cycle as cycle capping facies because of still stand or sea level fall and mainly associated with subaerial exposure surfaces such as; mudcracks, solution pores or vugs, collapse breccia, insitu microkarstic breccia, caliche (laminar calcrete), root casts, "Microcodium" accretion and planar erosion surfaces. These type of shallowing – upward meter – scale cycles are interpreted as small – scale sequences (parasequence of VAN WAGONER et al. 1988). Small –scale sequences are considered to represent climatic cycles controlled by the Earth's orbit (Milankovitch cycles). However, within the Jurassic portion of the succession, cyclicality is mainly dominated by subtidal facies and capping exposure structures, and interpreted as exposed subtidal cycles. Within the Cretaceous portion, cyclicality is well documented through complete peritidal facies and called as peritidal cycles. Within these two main cyclicality, because of variation in the microfacies association, 8 subtypes are differentiated called as A, B, C, D, E, F, G, and H. According to the position and association of these types of parasequences within the sequences, the genetic stacking of parasequences are used for the subdivision of sequences into system tracts and two examples are given from the studied interval. By the help of this method, transgressive and highstand system tracts within a sequence can be differentiated at the outcrop.