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Biostratigraphy and Palaeoecological Implications of the Tortonian – Messinian Transition of Faneromeni Section, Sitia Basin, Eastern Crete

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Integrated biostratigraphic and palaeoenvironmental analyses of foraminiferal and mollusk assemblages are presented for the late Tortonian/early Messinian succession of the Faneromeni succession, Sitia Basin, Eastern Crete.

The study focused on the basal part of the succession which consists of blue grey marls interrupted by a *Neopycnodonte cochlear* bioconstruction, about 2 m thick in total. The basal sediments contain forms of *Globorotalia miotumida* group, astronomically dated at 7.238Ma, (Hilgen et al., 1995). This event can be used as a reliable marker for the Tortonian/Messinian boundary. *Neogloboquadrina acostaensis,* sinistral coiling specimens, are dominant in the faunal assemblages.In the upper part, the scattered occurrence of *Globorotalia nicolae* indicates an age of 6.829 Ma.

The microfossil assemblage of the studied facies records an offshore marine setting and contains planktic and benthic foraminifera. Both on the basis of the P/B ratio and benthic foraminiferal assemblages an outer shelf to upper slope environment is estimated for this interval. *Cibicidoides kullenbergi* and *Siphonina reticulata* are common in the basal part. The upward disappearance of *S. reticulata* constitutes an important bioevent, which occurred just after the Tortonian/Messinian boundary.

Benthic foraminiferal pattern is characterized by alternations of *Uvigerina peregrina* s.l. and *Cibicidoides kullenbergi* assemblages, suggestingthat the benthic foraminiferal assemblages through the section are mainly controlled by the trophic conditions, specifically by the quantity and quality of the organic matter reaching the sea floor(Fontanier et al. 2002; Koho et al., 2008; Schmiedl et al., 1997, 2000, 2003).

The presence of *Neopycnodonte cochlear* which is forming clumps as a monospecific community reinforce the results of benthic forams, indicating a very specific set of environmental conditions such as a unique hydrodynamic environment, in upper slope or outer shelf when increased nutrient supply accumulated.

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