

Zanclean-Piacenzian climate variability in the eastern Mediterranean (Pissouri basin, Cyprus Island)

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The Pissouri Basin (Cyprus Island) corresponds to a small tectonically controlled depression elongated NNW-SSE and widening southward in the direction of the deep Mediterranean domain. In the centre of the basin, the section Pissouri North, about 100 m thick, consists of well-preserved cyclic marine sediments including laminated brownish layers alternating with grey homogeneous marls.

The section spans the Zanclean-Piacenzian time interval. Plankton biostratigraphy (calcareous nannofossil and planktonic foraminifera) revealed a remarkable number of biovents bracketing the Zanclean-Piacenzian boundary. In particular the Highest Occurrence (HO) of *Reticulofenestra pseudoumbilicus* suggests the presence of NN14/15-NN16 nannofossil biozone boundary, dated at 3.84 Ma. Additionally the defined planktonic foraminiferal MPL3-MPL4a and MPL4a-MPL4b zone boundaries point to ages between 3.81 and 3.57 Ma, in Pissouri North section. Zanclean/Piacenzian boundary (3.6 Ma) is placed at 22.5 m from the base of the section, considering *Discoaster pentaradiatus* top paracme (3.61 Ma) and *Globorotalia crassaformis* first influx (3.6 Ma) bioevents.

TOC data, isotope records and micropaleontological analysis revealed the presence of numerous cycles that resulted in the sapropelitic/homogeneous marl alternations. Astronomically tuned climatic proxy records during the Zanclean-Piacenzian boundary suggest a complex pattern of climate fluctuations. The sapropelites developed along the Zanclean – Piacenzian boundary indicate a climate characterised by a period of warm – temperate and humid conditions and a highly stratified water column that occurred at times of precession minima.