



Biotical and palaeoenvironmental fluctuations in the late Albian of the Tethyan Realm

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Oceanic Anoxic Events (OAEs) were intervals known to produce conditions that favoured increased organic carbon burial rates. Most of the OAEs took place in mid Cretaceous times that are characterised by a global greenhouse climate. This paper discusses biotical and palaeoenvironmental changes (based on geochemical record) of a short mid Cretaceous OAE, namely OAE1d, produced during the Albian stage. Sections from Eastern Carpathians (Romania) and Tibet (China) were investigated for the calcareous nannofossils events along with ^{13}C and ^{18}O isotopic records. The OAE1d from the Youxia section (Tibet) extends within the nannofossil subzones UC0b–UC0c, containing Albian nannofossil events such as the last occurrence of *Hayesites albiensis*, followed by successive first occurrences of *Gartnerago chiasta* and *Cylindralithus serratus*. A positive excursion of the ^{13}C isotope was identified within this interval, including four sub-events (Yao et al., 2018). Besides, before the beginning of OAE1d, the occurrence of nannofossils more related to cold-water surfaces such as *Seribiscutum primitivum*, *Biscutum constans*, *Repagulum parvidentatum* and *Crucicribrum anglicum* (Bown et al., 1998; Mutterlose et al., 2009) was recorded, in an interval coincident with the latest Albian transgression (Haq, 2014). Based on isotope and palaeontological records, the OAE1d was identified in the southern part of the Eastern Carpathians bend. The positive shift of isotope ^{13}C is situated in the *Stoliczkaia dispar* ammonite zone (Melinte-Dobrinescu et al., 2015). The calcareous nannofossil assemblages are scarce, but contain, among other taxa, *Eiffellithus monechiae* and *E. turriseiffelii*, indicating a late Albian age. From the nannofossils showing a high-latitude affinity and upwelling conditions, rare *Biscutum constans* and *Seribiscutum salebrosum* are present. Spectral analysis of CaCO_3 content in the studied successions reveals that the sedimentary record was mainly controlled by eccentricity (~ 100 kyr) and precession (22.2 kyr). The interval covers by OAE1d is ~ 233 kyr.

References

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