

A Boreal high-resolution composite carbon isotope record of the Albian to Turonian interval from the North German Basin

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We present a potentially complete, six-hundred-meters-thick composite record of high-resolution bulk-rock carbon isotope data from northern Germany covering the topmost Lower Albian to Lower Turonian interval. The established composite record consists of more than 1700 measurements analyzed from seven drill sites including the Kirchrode I and II cores (Nebe, 1999; Fenner, 2001), the Anderten I and II cores (Bornemann et al., 2017), two industrial cores Wunstorf 2011/2 and 2011/8 as well as the Wunstorf research core (Voigt et al., 2008).

In the central North German Basin the Albian is represented by a several hundred meters-thick succession of clays and clayey marls, whereas the Lower Cenomanian is characterized by the transition from clayey to chalky sedimentation. The latter prevailed during the remaining Cenomanian. The top of the studied succession is marked by the prominent black shales of the Cenomanian–Turonian boundary event (CTBE). The isotope records display the carbon isotope expression of the Oceanic Anoxic Events 1d and 2 as well as the Lower and Mid-Cenomanian Events (LCE, MCE). The applied integrated approach of high-resolution chemostratigraphy and revised biostratigraphy gives way for a substantial improvement of the Boreal Cretaceous stratigraphy.

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