



## **A Boreal high-resolution d13C-carb record of the Albian–Cenomanian transition from NW Germany**

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The upper Albian of the central NW German Basin is represented by a monotonous (marly) claystone succession of several hundred meters thickness, which becomes siliceous in the topmost Albian (Flammenmergel facies) and shows a gradual increase in carbonate content during the early to middle Cenomanian.

Here we present a new ~160-m-thick composite record spanning the uppermost Albian to middle Cenomanian based on two cored drill sites at Anderten, east of Hannover (Germany). We successfully correlated the long-term d13C record to other European reference sections in England (Speeton; Mitchell et al., 1996) and Italy (Contessa – Stoll and Schrag, 2000) as well as to records from the NW German Basin (Wunstorf – Mitchell et al., 1996; Konrad 101 – unpublished). Based on the observed pattern we are able to identify the d13C expression of (1) the Oceanic Anoxic Event 1d, (2) the Albian–Cenomanian boundary, (3) possibly the Lower Cenomanian Event(s) (LCE) and, finally, (4) the Mid-Cenomanian Event (MCE) close to the top of the record.

Chemostratigraphic age assignments are supported by biostratigraphic results. Calcareous nannofossils indicate an extended CC9 zone up to the lowermost CC10 (UC0–UC3 according to Burnett et al., 1998) as indicated by the FAD of *Microrhabdulus decoratus* at the top. Moreover, previously described influxes of *Rotalipora* aff. *reicheli* and the occurrence of the ostracod *Neocythere steghausi* support a mid-Cenomanian age for the upper part of the studied succession. Due to both moderately well preserved microfossils and high sedimentation rates the drilled succession can be considered as a potential reference for the Albian–Cenomanian transition in the Boreal realm.

### References:

- Burnett, J. (1998). Upper Cretaceous Calcareous Nannofossil Biostratigraphy, 132-199. – in: Bown, P. (Ed.) *Calcareous Nannofossil Biostratigraphy* (Kluwer Academic Publishers).
- Mitchell, S., Paul, C., Gale, A. (1996). Carbon isotopes and sequence stratigraphy. *Geol. Soc. London Spec. Publ.*, 104, 11-24.
- Stoll, H.M., Schrag, D.P. (2000). High-resolution stable isotope records from the Upper Cretaceous rocks of Italy and Spain: Glacial episodes in a greenhouse planet? *Geol. Soc. Am. Bull.*, 112, 308-319.