

Early Ypresian microfossil assemblages and stable isotopes during a distinct plankton peak in the Corbières (Aude, France) continental margin record

Claudius Pirkenseer¹, Etienne Steurbaut², Robert Speijer²

¹ University of Fribourg, Chemin du Musée 6, CH-1700 Fribourg

² University of Leuven, Celestijnenlaan 200E, B-3001 Heverlee

The Corbières Foreland Basin represents the southeastern-most extension of the Aquitaine Basin. During the Ypresian a succession of marine, brackish and fluviolacustrine sediments were deposited in the Corbières (Aude, France) region. The present study focuses on the middle and upper part of the neritic „Blue Marls“. Samples from the overview section contain calcareous nannofossils indicating the zone upper NP11 and high sedimentation rates. Ostracoda, foraminifera and larger faunal elements suggest a shift from outer neritic to nearshore/delta-front environments. The lower third of the section is characterized by a strongly variable plankton/benthos-ratio (1–85%). A last pronounced peak in planktic foraminifera occurrence is linked to a near disappearance of all larger faunal elements and a change in the ostracod assemblage.

A detailed sampling (46 samples in 15 cm intervals) pinpoints the correlation between rising P/B-ratio and abundance and composition of the ostracod assemblage. Variations in the assemblages of the planktic and small benthic Foraminifera taxa suggest rapidly changing conditions, probably triggering the speciation event in the ostracod lineage *Echinocythereis isabonana-aragonensis*. During the depleted interval ostracoda and foraminifera numbers decrease, *Pseudouvirina wilcoxensis* is nearly absent and buliminids, *Pulsiphonina wilcoxensis* as well as echinoderm spines peak. The depleted interval is slightly preceded by the first occurrence of the planktic taxa *Subbotina hornibrooki* and *Globoturbotalites bassriverensis*, the latter representing a PETM-excursion taxon. The subsequent interval is characterized by a rapidly increasing P/B-ratio, a dominance of *Globoturbotalites bassriverensis* and *Pseudohastigerina wilcoxensis* as well as an altered ostracod assemblage. Sedimentation of clastic material larger than 63µm increases approximately 100%. Bulk $\delta^{13}\text{C}$ values generally drop from around -1,0‰ to around -1,5‰ and then increase to -0.8‰ after the plankton peak. This negative excursion is probably linked to one of the global CIEs in zone NP11 (H-K), though the short represented timespan (approx. 15ka) renders a clear correlation difficult.