

The Palaeogene of Schöningen (N-Germany): a long-term record of land-sea interaction during the last greenhouse climate

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In recent years the mine Schöningen Southfield which is operated by Eon, formerly Braunschweigische Kohlebergwerke (BKB), exposed a rather continuous section most probably starting in the Late Paleocene and ranging into to the early Middle Eocene. The succession includes 10 coal seams with clastic interbeds, all of which show marine influence to various degrees. A generalized section which may serve as a reference for the Early Eocene at the intersection between land and sea in the area has been compiled from numerous overlapping partial sections which have been described and sampled mostly in rather high resolution. Detailed sedimentological, organic geochemical and palaeobotanical/palynological investigations are in progress.

The poster depicts a number of sedimentary and biotic aspects characterizing distinct environments and biota alternating and interacting along a shoreline which migrated back and forth within a broad estuary at the southern margin of the North Sea basin. Facies distribution was influenced by eustatic sea level changes, basin subsidence due to subsurface salt withdrawal and varying input of clastic material from the terrestrial catchment area.

Though the Early Eocene is globally considered to be the peak of the Cenozoic greenhouse phase the climate was punctuated by a number of hyperthermal events which were postulated mainly on the basis of evidence from the oceanic realm. The records from the Schöningen section indicate, however, that their effects on the terrestrial environments may have been significantly modified by the local conditions. However, the observed shift from alternating wet/dry conditions to a perhumid climate at the Lower to Middle Eocene transition is clearly more regional in nature.