

LATE QUATERNARY CHANGES IN TERRIGENOUS ORGANIC MATTER ACCUMULATION ON THE CONGO FAN: IMPLICATIONS FOR AFRICAN PALEOCLIMATE

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Late Quaternary sections from the Congo deep sea fan (ODP-Site 1075) are used to reconstruct the terrigenous organic matter supply into the easternmost equatorial Atlantic. Variations in quantity and quality of riverine OM reflect the interaction between the paleoclimatic development within the catchment area and the paleoceanographic conditions in the Congo river plume. To characterize the organic matter composition with regard to terrigenous and marine fractions we used organic geochemical methods (elemental analysis, stable carbon isotopes Rock-Eval pyrolysis) and organic petrology. A distinct cyclicity and well corresponding frequency within all organic geochemical parameters indicates a mainly precession controlled sedimentation of OM on the Congo fan. Results from Rock-Eval pyrolysis indicate the deposition of mixed kerogen type-III/II. Remarkable high-amplitude fluctuations in Tmax demonstrate cyclic changes in the relative proportions of low- and highmature OM. Organic petrological observations confirm the existence of abundant terrigenous plant tissues, both non-oxidized (vitrite) and oxidized (inertinite). Charcoal type particles (fusinite) are attributed to periods of increased bushfires within the catchment and may be used as an indication for aridity. The ratios of specific phenolic lignin components allow to draw conclusions on the type of vegetation in the catchment area (C3 vs. C4 plants). As the terrigenous fraction mainly originates from non-woody angiosperm tissues (grasses/leaves) a positive correlation between the relative amount of lignin phenols (L) and bulk $\delta^{13}\text{C}$ corroborates the conclusion that an appreciable amount of the terrigenous organic fraction derives from C4 plants and may cause an underestimation of the terrigenous proportion of bulk OM.