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# Climate change and variation in organic carbon deposition since the LGM in the Northeastern South China Sea

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South China Sea is a marginal sea surrounded by the Asia continent and islands. Huge amounts of suspended particles originated from large rivers of the continental Asia and small rivers of the surrounding small islands. A major fraction (58%) of the total 320 Mt/yr suspended sediments deliver to the Northeastern SCS is from small rivers of Taiwan in the present day. A set of cores was taken from the NE SCS to investigate types and rates of sedimentation and source variations during climatic changes by analyzing sediment organic carbon, organic nitrogen, carbonate and biogenic silica contents, grain sizes, total aluminum, manganese and iron concentrations as well as C14 dating on carbonate tests.

The results showed that climatic changes play dominating role on types, sources rate, and variations of sediment deposition in the study region. The area is characterized by low (<20%) carbonate contents. Carbonate, organic carbon content, C/N ratio and sand contents varied with depth (time). Peak carbonate contents were found after the LGM, 7k and 4k BP. Average sediment organic carbon concentrations reached 0.5% with maximum at the LGM as well as at 4k BP. Most organic carbon/nitrogen ratios displayed marine signature, however, higher C/N ratios were found at the LGM and 4k BP with a decreasing trend from LGM to 5k BP . A period of decreasing trend of C/N ratio correlated well with an increasing trend of terrigenous material input as depicted by iron contents after the LGM. A drastic fluctuation of terrigouns/marine materials was observed at around 4-5 kBP, probably reflecting changes of monsoon system.