# A review on the Holocene soure-to-sink transport process of the Changjiang (Yangtze River) sediment in the East China Sea

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The source to sink transprot process of terrigenous sediment from East Asia continent to the marginal seas is crucial for the understanding of land-ocean interaction and marine sedimentary process in the West Pacific continental margin. East Asian rivers play a key role in earth surface process and land-sea interaction by linking continental/island weathering and chemical evolution of global ocean. The Changjiang (Yangtze River) is the largest river originating from the Tibetan Plateau and bridges the Eurasian continent and the west Pacific Ocean via the East China Sea. In this contribution, we review the state-of-art research progress on the possible sinks of the Changjiang-derived sediments in the East China Sea during the Holocene.

Various lines of evidences from mineralogical, sedimentological and geochemical observations suggest that the major sinks of the Changjiang sediment in the East China Sea gradually shifted from the mid-outer shelf during the last glaciation to the inner shelf and present river mouth since the middle Holocene, with the rising sea level and formation of oceanic current system. Driven by asynchronous evolutions of the Indian and East Asian summer monsoon, the provenance of sediments accumulated in the Changjiang Estuary gradually changed from the upper catchment in the early Holocene to the mid-lower drainage basins in the mid-Holocene. With the intensive agricultural cultivation and urbanization development in the Changjiang basin, the major source of Changjiang sediment into the sea shifted back to the upper catchment in the late Holocene. Therefore, the Holocene provenance evolution of Changjiang sediments in the East China Sea witnessed the changes of governing sediment erosion process within a large river system from monsoon climate–dominated to anthropogenic driving. Our study also suggests the strong effect of hydrodynamic differentiation in coastal and shelf environments on sedimentary geochemical compositions, which deserves more attention in sediment provenance study.

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