offshore deltaic muddy sand deposits accounting for the high turbidity of the nearshore gulf waters throughout most of the year. This resuspended mud is transported landwards with each tidal cycle resulting in the deposition of a mud blanket over the margins of the tidal channels and the extensive intertidal to supratidal mudflats between the successive beach ridges or cheniers. The thickness of the mud blanket in the channel is greatest a few hundred metres from the mouth with a slow decrease in thickness upstream until the tidal limit is reached usually some 20 km or more inland. Mud deposition within an annual cycle is commonly 10 cm or more on point-bars where it forms an annual sand-mud couplet. Upstream from the tidal limit a very rapid reduction in mud is apparent and the channel bed remains predominantly sandy.

The resultant pattern of broad rounded to straight delta morphologies is characteristic of the Gulf of Carpentaria deltas exposed to wave modification, with the only exceptions occurring where the river mouths are protected by offshore islands, e.g. in the McArthur River delta.

Impacts of last glacial-interglacial cycle on sediment yield and delivery in Yangtze Drainage Basin to the East China Sea

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Sediment output from a drainage system is mainly controlled by tectonics, climate (glaciation and precipitation), and sea level change. There are quite ambiguous on the driven mechanisms of sediment yield and delivery processes in drainage basins. Some favor exhumation in mountainous regions being controlled by tectonic forces, while others presume that climate is the primary forcing of sediment erosion and dispersion, especially in monsoon systems. Furthermore, Mé tivier and Gaudemer (1999) argued that the average sediment input of the large rivers of Asia should have remained constant throughout the Quaternary in spite of strong tectonic activity and great fluctuations in climate and sea level. This paper focuses on the provenance change of the Yangtze drainage basin in the past ca. 20 ka through using U-Pb dating of zircon grains from the Yangtze delta, eliminating changes in tectonics as the potential forcing of sediment production. Consequently, changes in the provenance of sediment delivering to the delta are used to discuss how climate change has influenced sediment production in the Yangtze drainage basin since the Last Glacial Maxium (LGM).

The two major U-Pb age populations were clustered at 50-350 Ma with a prominent peak around 200-250 Ma and 550-900 Ma with an obvious peak around 700-800 Ma. 200-250 Ma correlates to the age of collision between the South and the North China blocks, and 700-800 Ma is the age of amalgamation of the Cathaysia and the Yangtze block to form South China. Two minor age populations were located at 350-550 Ma with a minor peak at 450-500 Ma and at 1450-2000 Ma with a minor peak at 1700-1750 Ma. A 450-500 Ma population is likely derived from rocks of Andean-type arc preserved in the northern Qinling Shan. A 1.7-1.75 Ga population is usually considered to source from the North China block, which is almost located beyond the Yangtze drain basin. This age zircons are inferred to be recycled sediments from Songpan-Ganzi terrane, highly folded and uplifted Since Tertiary. Middle Holocene deposits have higher content of Early-Proterozoic grains and less abundance in Late-Proterozoic and Triassic grains than LGM sediments. It may be inferred that strong summer monsoon during Middle Holocene should have drain more sediments from the Upper Yangtze drainage basin (i.e. Songpan-Ganzi terrane). Weakened summer monsoon at present is, however, not observed to decrease the input from the Songpan-Ganzi terrane. It can be interpreted to suffer from human impact on sediment yield patterns over climatic cycle.

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Spatial distribution characteristic of sedimentation rates on the Tianjin supratidal zone

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In the last hundred years, especially the past tens of years, results of natural factors and human