

Distribution and dispersion of suspended matter in the Yellow River estuary

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A large scale investigation of sediment and suspended matter in the Yellow River estuary and adjacent shallow sea was carried out during August-September, 2007. During the survey about 800 stations were covered and surface sediment samples were collected at each station, as well as 1200 water samples from about 400 sites at depth of 1 m (surface layer), 5 m (middle layer) and 1~2 m from the bottom (bottom layer) generally. The Sea-Bird SBE 25 and LISST-100 were used to get in situ temperature, salinity, turbidity and grain size of suspended matter at the water sampling stations. Grain-size composition of the surface sediment samples were analyzed by Malvern Mastersizer 2000.

The grain-size analysis data of surface sediments shows that the Yellow River estuary and adjacent shallow sea is mainly covered by silt and clayey silt, while sand and sandy silt occupy the eastern and southern side of Laizhou Bay. Surface and bottom suspended matter concentration have same horizontal distribution trend with averages of 15.6 mg/l and 29.1 mg/l respectively. Observed surface and bottom turbidity, as well as the suspended matter concentration displays two high suspended matter concentration zones north (37.7°N-37.9°N, 119.3°E-119.5°E) and south (37.4°N-37.6°N, 119.3°E-119.5°E) of the Yellow River estuary, which is in accordance with residual circulations distributed at these areas. This implies that the distribution trend of these high suspended matter concentration zones may be dominated by the residual circulations. The suspended matter concentrations amount to more than 20 mg/l and 40 mg/l in the surface and bottom layer respectively. Fine sediments in these two high suspended matter concentration zones are mainly due to re-suspension of sediment, while suspended matter north of the estuary is also influenced by suspended matter transported by the Yellow River.

The horizontal distributions of surface and bottom salinity are similar and illustrates a lower salinity zone extending from south of the Yellow River estuary to northeast. Distribution trend of

suspended matter concentration, turbidity and salinity indicates that part of sediment from the Yellow River goes south-east into the Laizhou Bay and then turns northeast at the center of the bay to the Bohai, but not transport along the Laizhou Bay coast east into the north Yellow Sea.

Mekong river delta in Vietnam: morpho-sedimentary characteristics and holocene evolution

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The Mekong River Delta (MRD) has prograded more than 200 km from the Cambodian border to the present coastline in southern Vietnam over the last 5-6 ka. The detailed topography of the subaerial delta plain shows an upper delta plain dominated by fluvial processes, lower delta plain characterized by well-developed beach-ridge systems and deltaic margin mainly influenced by marine processes (Nguyen et al., 2000). The upper delta plain mainly occupied by swamps and flood plain about 0.5 to 1.5 m high, and surrounded by the Late Pleistocene deposits of 3.0 to 5.0 m high to the north. In the lower delta plain, the rows of beach ridges trend northeast to southwest and are 3 to 10 m high; they are separated by inter-ridge swamps about 1.5 to 2.5 m high. The beach ridges often have a diverging, bifurcating pattern formed by southwest-ward progradation. The deltaic margin in Ca Mau located on the southwestern part of the MRD characterized by the lowest lands of mangrove swamps (Nguyen et al., 2000).

The Late Quaternary depositional sequences of the MRD developed during the last glacial episode and constitute incomplete sequences that are still evolving. The Pleistocene deposits are exposed to +5 m at the north part, and lowered to about -2 to -4 m in the upper delta plain, then commonly -10 to -35 m in the eastern part of the delta and -10 to -15 m in the Ca Mau peninsula excepting some incised valleys of Mekong river system reaching over -70 m. The Pleistocene deposits are dated 43.4 and 50.4 ka at some boring