Sediment composition and distribution characteristics of the East China Sea shelf and their indication to transportation processes

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East China shelf sea accepts rich material from China mainland where sediment compositions and their distribution patterns contain abundant information of land and sea interaction and "source to sink " processes. It is of great significance of environment science and engineering to clarify the process and mechanism of terrigenous sediment diffusion and deposition.

Ninety percent of fine grained sediment distributes along the coast of Zhejiang and Fujian Province and southern west area off the JeJu Island. Different grain size fraction has different distribution patterns. As characteristic minerals of Yangtze River sediment mica and dolomite are also higher in the inner shelf and have tendency to spread out to the middle and out shelf. Calcite content in clay fraction concentrates on the out shelf margin and suddenly reduce to the middle shelf. Concentration of lead and radioactive ^{210}Pb is enriched out shelf and have spread tendency from southwest to northeast, which is quite consistent to the surface current vectors.

In conclusion, terrigenous matter mainly distributes in the inner shelf and partly spread to the middle and out shelf. Much terrigenous sediment deposited on the northern shelf, whereas hydrodynamic effect is much stronger in the southern area. Sediment supply and circulation control transport and diffusion of the terrigenous materials, and also determine the sediment distribution patterns. The cross-shelf penetrating fronts is beneficial for fine grained sediment to escape from of the inner shelf and spread to the out sea.