黄河デルタの堆積速度と堆積構造分布

Modern sediment accumulation and sedimentary structure of the modern Yellow River delta

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Since 1976 the Yellow River channel has been located on the east side of delta complex and has built out a broad sedimentary lobe. In 2012, extensive bathymetric and high resolution seismic profiles, vibrocores in the survey lines and surface sediments were collected off the Yellow River delta and in Laizhou Bay. This study examines the sedimentation and morphology in the modern Yellow River delta and in Laizhou Bay, based on analyses of radionuclides (^{137}Cs, ^{210}Pb, ^{134}Cs), sediment structure and texture, surface sediment distribution pattern, and the morphological change between 1976 and 2012. Bathymetric profiles, especially the S-N profiles, reveal the present morphology of the delta front which exceed previous estimated boundary, and this also validate on basis of analysis of ^{137}Cs in cores. The ^{137}Cs onset depths corresponding to the depths of lithological changes and morphological changes indicate that it can be a proxy to track the dispersal of Yellow River-derived sediments in the study area. Synthesis of bathymetry, seismic profiles, ^{137}Cs profiles and surface sediment pattern show that a depocenter occurs in the south frank of the Yellow River delta (morphologically a spit) in west of Laizhou Bay. The deposition probably results from the headland eddy that formed with the morphological change. ^{210}Pb profiles only in shelf area provide reliable accumulation rates, while ^{137}Cs profiles show the depositional thickness in the whole area. Morphological changes along with ^{137}Cs profiles of cores were used to establish the present sedimentary frame of the delta front slope and sediment dispersal in the west of Laizhou Bay.

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