

Deltafront Clinoform of Abandoned Yellow River Delta in Jiangsu Province, China

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The abandoned Yellow River delta in Jiangsu province is a major sediment supplier to the South Yellow Sea and East China Sea. In this study, comparison of historical maps, two cores and three seismic profiles were used to examine its deltafront clinoform (nearshore clinoform). The original historical maps and nautical charts since AD 1750s were collected and compared after calibration, showing the accretion of the shoreline before 1855, when the Yellow River shifted to the Bohai Sea. Near Sheyang River mouth, two 20m-long cores onshore (1 m above present sea level) and offshore (6 m below present sea level) were on a line normal to the shoreline. Samples of both cores were dated using AMS ¹⁴C and OSL(Optical Stimulated Luminescence) dating technologies. Ages in bottoms of the cores are 43000 to 44000 cal yr BP. At approximate 17.5m below present sea level in both cores, yellow and younger (younger than 5000 yr BP) silt sediment occurs. Several young ages in upper part of two cores were obtained, and these show a clear clinoform pattern. Furthermore, seismic profiles across the offshore core show the deltafront clinoform. The upper part weak reflector or transparent part in seismic profiles become thinner seaward and the lower part is strong reflectors. Sea bottom nearshore show a convex shape, but the seaward low gradient part show erosional gullies. The evolution of the deltafront clinoform was revealed in profiles and in plan view.

Keywords: Abandoned Yellow River Delta, Deltafront clinoform, C-14 ages, OSL ages