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River-Sea Interaction and the North Jiangsu Plain Formation

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The plain is located on the northern side of the Changjiang River and the south of Lan-Shan-Tou cape in the area of 32º10'-35º05'N and 118º40'-120º30'E. The landform is mainly lowland declined from the Grand Canal in the west towards to the east along the Yellow Sea coast, but the lowest part is around Xinhua-Sheyang lake area in the middle part of the plain. Water network of rivers and lakes is the major feature of plain as supported by abandoned Yellow River-Huai River system in the north, the Changjiang River system and numerous lakes.

Previous studies have explained that the outer part of the plain was formed from the sea during Holocene high sea level period as defined by a series of shell beach ridges located in the Longgang, Dagang, Dongtai and Haian about 200km long from north to south, and is located 60km west of the present coastline. ^{14}C dates indicated it was formed 5 kaB.P. and until 1027 A.D. as an artificial dike named Fan-Gong dike was built up and connected the shell beach ridges as a whole during 960-1068 A.D. to define the sea water.

Geomorphologic features seem to indicate the formation of the inner plain west to the Fan-Gong dike. (1) A series of lakes such as Hongze Lake, Gaoyou Lake, Shaobo Lake are almost connected to each other or by lowland or by swamps between, located on the east side of Grand Canal, there are deltaic forms located on the west side of all lakes, actually the Grand Canal had been dig up by using the water channels or swamps lowland of the lake series; (2) A series of islands, bars or barriers are pieces of land located in the lakes or water swamps, local named them as Dun, Duo or Wei, these are the precious lands as settlements for people living in the water country area. All the islands or barriers are ranged in the north to south direction, and still paralleled to the present coastline. Sea shells and fragments have been found on these lake islands indicated the original formation were from the sea; (3) Sediment core penetrated 145m deep of the middle part lowland, partly result from size, mineral and chemical elements analyses indicated a river-sea formational process of the plain, *i.e.* it was from shallow sea environment in the lower core, gradually deposited to be transitional environment towards upper part, and then to form a territorial plain as the last stage to be present plain.

Keywords: nouth Jiangsu plain; river-sea interaction; shell beach ridges; lake