



Comparison of the Coastal Landforms along Jiangsu Province of China with Inland Desert Landforms

Xianrong Ding, Xiaoping Ge, Qing Li, Yanyan Kang, and Tingting Zhang

School of Earth Sciences and Engineering, Hohai University, Nanjing 210098, China

The submarine radial sand ridges along the coast of Jiangsu province in eastern China are unique in the world in many aspects. Based on a systematic survey, the geomorphology and sediment characters of Jiangsu coast were compared with inland deserts. It is found that there are desert character of Jiangsu coast, which could be shown as follows: (1) there is rich sandy material bases for the coastal desert, composed of silt and fine sand, the loose modern sediment layer in thickness of $30m \pm 10m$ has deposited over 50000 km^2 Jiangsu coast since middle Holocene (i.e. 6000a BP), overlapped the older clay layer of the Late Pleistocene; (2) the Jiangsu coastal landforms resemble inland deserts in that, 8 large sand ridges, each of them are more than 100km long, 10-30km wide and 10-30 high, are alike to inland sand ridges, and about 70 sandy shoals are alike to inland sand dune; (3) the landform activities of Jiangsu coast resemble that of inland deserts, as the changeable characters of the submarine radial sand ridges changes are similar to that of mobile inland deserts, and the stability of 10 ancient coastal sand bars along the coast which are farmed in Jiangsu coastal plan like that of stable inland deserts. The essential difference between Jiangsu costal landforms and inland deserts is driving forces of their generation, i.e. the costal landforms are generated by marine tides and waves, whereas the inland deserts are generated by arid winds. The comparison between coast landforms and inland desert landforms can not only to understand natural formation and evolution of Jiangsu coast landforms, but also to understand the common causes of sandy coasts around the coastal plain around the world, such as the east coast of U.S., the North Sea coast, Persian Gulf coast, and so on.

Keywords [U+FF1A] coastal landforms and sediments, deserts, submarine radial sand ridges, Jiangsu coast