Abstract Details

AOGS 1st Annual Meeting > Natural Hazards > Land and Sea Interaction in the Marginal Se Eastern Yangtze Coast, China: Quaternary Stratigraphy, Palynology, and Transgression >

Corresponding Author : Dr. Taoyuan Wei (weit235@yahoo.com.cn)

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Title: Land and Sea Interaction in the Marginal Sea of the Eastern Yangtze China: Quaternary Stratigraphy, Palynology, and Transgression

Abstract:

In 2001, a Quaternary sediment borehole (PD) of 360m long was rec from the Yangtze coast. The borehole penetrated Quaternary sedimer late Tertiary sediment section, which overlies the bedrock of Miocene Paleomagnetic test in association with numerous petrological and biol evidences records the Quaternary environmental evolution of the delt region. The early Pleistocene stratigraphy (289-153m) consisting of s major sediment cyclicities is the thick yellow and gray gravelly sand a Sorting is poor. Large-scale trough bedding appears in the sediments. marine fossils occur throughout. The mid-Pleistocene stratigraphy (15 104m) is rather thin and is dominated by the yellow coarse to fine sa mottled muds. Sorting is relative poor. Trough and undulate beddings present. Foraminifera and marine ostracode appeared sporadically. La Pleistocene stratigraphy (104-29.4m) consists chiefly of one major se cyclicity. The yellowish to gray, coarse to medium sands occurs as bas sediment section, and fine sand and silt appears at upper section. Var sedimentary beddings are seen in the sediment, i.e. trough, wavy, an undulate, etc. Foraminifera and marine Ostracode occurred throughou Holocene stratigraphy (29.4-0m) comprises the gray fine sand and m Sorting becomes good, cross beddings are seen, and marine fossils pr stiff mud layer (32.40-29.4m) without marine fossils separates the la Pleistocene and Holocene sediment sections. Numerous pollen-spore s were analyzed to examine the temporal variations of paleoclimate cha through Quaternary. Pollen spore assemblages reveal alternated glaci interglacial epochs, and delineate the warmer climate setting in early Pleistocene represented by high proportion of evergreen species such Castanopsis, Oleaceae, Evergreen Quercus, Ilex. Temperature began from the late period of early Pleistocene to mid-Pleistocene, as marke high proportion of coniferous-deciduous species, i.e. Pinus, Abies, Pic Ulmus, Deciduous Quercus, etc. Climate obviously enters into a warm period in late Pleistocene and Holocene indicated by a large amount o evergreen, grass, and ferny species occurring throughout. We propos this climate warming in late Pleistocene and Holocene timing at 100 k tends to link with global change affected by the Tibetan uplift since Pl pleistocene, and had been closely associated with enhanced monsoon in the eastern Asia marginal sea. Quaternary transgression can be differentiated both from foraminiferal occurrence and geochemical ind