

Presently, we are paying more attention to the future delta studies, primarily involving estuarine sedimentary processes in response to east Asia monsoon and human activities in geological and human dimensions.

Key words: geomorphology; sedimentary environment; sea level; east Asia monsoon

Modern mangrove pollen representation and a 9,000-year record ecological changes from the northwestern coast area of the South China Sea

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The relationships between vegetation and modern pollen are examined along a coast to inland gradient of plant communities in the Yingluo Bay area, Guangxi, in China. Communities of *Rhizophora stylosa*, *Kandelia candel*, *Bruguiera gymnorrhiza*, *Kandelia candel* and *Excoecaria agallocha* that develop on tidal flat were sampled for pollen analysis. The distribution of these communities can be related to both specific plant individual and environmental parameters such as plant cover, tree breast diameter and topography, water table depth, substrate type and salinity. High percentages of mangrove types can reflect the mangrove vegetation in general, although some terrestrial pollen occur. After drawing the scatter diagram and using correlation analysis, cluster analysis and detrended correspondence analysis, we summarized two groups impacting on pollen abundance. One includes the parameters of plant, in which plant cover is significant associated with pollen percentages for *Rhizophora stylosa* and *Kandelia candel*, plant percentage play an important role on pollen abundance for *Bruguiera gymnorrhiza* and *Excoecaria agallocha*, and tree breast diameter is for *Avicennia marina* by controlling plant percentage. The other group mainly focuses on the environment conditions, of which soil types and salinity factors are displayed by the first axis of DCA, altitude or water table depth shown by the second axis and tidal hydrodynamics

indicated by the third axis according to the separated samples associated with the communities in each sampling squares. Subsequently, fossil data from four cores in a mangrove system from the northwestern coast area of the South China Sea were compared to the modern data set in search of similarities between fossil and modern pollen spectra. Both of regression correlation and composite DCA revealed that the fossil pollen assemblages have modern counterparts, permitting to interpret the vegetation changes of various areas and the coastal line migration in greater details during the last 9000 years.

Neotectonics of the Jadukata fan, Bangladesh

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Jadukata fan is one of the fans developed at the base of the southern foothill region of the Shillong Plateau in Bangladesh. With the objectives of characterizing a tropical and humid alluvial fan and examining the influence of tectonics in the formation and development of a fan, geomorphology of the fan has been studied. This study has been carried out with help of different remote sensing data and subsequent field checking. Natural levee, bars and crevasse splay are the common geomorphic features on the fan. The area lies in a tectonically complex region of the world, evidenced by the high seismicity. Important neotectonic signatures identified on the fan are preferred flow direction of the streams, bends in several streams along a N-S directed line, sudden widening of consecutive small streams along a E-W directed line and multi-level of bars on the Jadukata River. Results of the study show that the alluvial fan building processes is controlled by the neotectonic activities. The whole area is affected by natural hazards like flood, river bank erosion and siltation. Data show that low magnitude earthquake occurred in the area during the last two decades. Occurrence of these and several large earthquake in the surrounding areas in the past indicate the possibility of future earthquake occurrence.