



Integrated magnetostratigraphy and lithostratigraphy of five cores in Yangtze delta, China : significance of sedimentary evolution

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The sedimentary history and characteristics of the Yangtze delta help us understand the tectonic evolution and geological formation process in the Eastern coastal area of China since the Cenozoic Era. Previous chronology of sediments in this area are not detailed or precise. Furthermore, when the delta area reached the maximum is still debatable. Palaeomagnetic polarity reversal and excursions, AMS14C dating, optically stimulated luminescence (OSL) dating, and the hard clay marker layer analysis were integrated to establish the chronostratigraphic framework of five drilling cores from the south Yangtze delta.

Results from the bottom part of core CSB6 suggested Gauss normal polarity chron, an age of more than about 2600 ka. The other four cores showed initial deposition time between 200-60 ka B.P., significantly later than CSB6. We infer the reason is that CSB6 locating in the Changxin-Fenghua Fracture. Combined with data from referenced magnetostratigraphic cores in the Yangtze River Delta, we suggest that tectonic movement resulted in a much longer depositional age in some parts of the Yangtze River Delta and influenced the sedimentary characteristics of thick (North) to thin (South) and thick (East) to thin (West). In conclusion, a relatively wide range of deposition in the Yangtze River Delta occurred since about 200 ka B.P. The deposition of fine particles (clay-silt), which was controlled by slow tectonic subsidence and sea-level changes, expanded to the whole delta region after about 60 ka B.P. We propose that this time scale maybe used for further study on the evolution of the Yangtze delta's paleoclimate and paleoenvironment.

References

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