Geophysical Research Abstracts
Vol. 13, EGU2011-4231-2, 2011
EGU General Assembly 2011

Depositional history of late Quaternary mud deposits using high resolution seismic profile in the southeastern Yellow Sea

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Depositional history of late Quaternary mud in the southeastern Yellow Sea was studied using high-resolution seismic profiles and core sediment data. Approximately 600 line-km data of chirp and sparker profiles was acquired. Along with seismic profiling, 10 piston core samples were collected and two previous long drill cores were used to compare with seismic data. High-resolution seismic profiles show distinct three stratigraphic units (A1, A2, and B from oldest to youngest) within mud deposit overlying the acoustic basement and coarser layers. The lowermost Unit A1 shows prograding trend toward southwest with filling the irregular acoustic basement. The dip of inner reflector of Unit A1 decreases slightly toward southwest. The top of Unit A1 is composed of erosional surface which is distinct boundary with Unit B, as strong reflection. Unit A2 is characterized by acoustically more subparallel and distinct inner reflectors than Unit A1. Unit A2 is prograding toward south and southeast and much of Unit A2 is exposed at the seafloor. Unit B completely covers Unit A1 and pinches out southward. Unit B displays parallel inner reflectors with seafloor, regionally including transparent reflectors. These seismic profiles and analysis results of long drill cores and piston cores suggest that Unit A2 was formed by redeposition of sediments eroded from Unit A1. Unit B is likely to consist of the resent mud when sea level was close to the present level. These depositional features of late Quaternary mud deposits in the southeastern Yellow Sea are probably related to the strong tidal, regional currents, and sea level change. And also, these high-resolution seismic profiles conducted this study present clear evidence to explain the regime of Unit A2 originated from Unit A1 and upper recent mud deposit (Unit B).