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Provenance and Transport Process of Fine Sediments in Central South Sea Mud

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The Central South Sea Mud (CSSM), developed in the Seomjin River estuary, is known to be supplied with sediments from Heuksan Mud Belt (HMB) and Seomjin River. However, in order to form a mud belt, more sediments must be supplied than supplied in the above areas. In this study, clay minerals, major elements analyzes were performed on cores 16PCT-GC01 and 16PCT-GC03 in order to investigate the transition in the provenance and transport pathway of sediments in CSSM. The Huanghe sediments are characterized by higher smectite and the Changjiang sediments are characterized by higher illite. Korean river sediments contain more kaolinite and chlorite than those of chinese rivers. Korean river sediments have higher Al, Fe, K concentraion than Chinese river sediments and Chinese rivers have higher Ca, Mg, Na than those of Korean rivers. Therefore, clay minerals and major elements can be a useful indicator for provenance. Based on our results, CSSM can be divided into three sediment units. Unit 3, which corresponds to the lowstand stage, is interpreted that sediments from Huanghe were supplied to the study area by coastal or tidal currents. Unit 2, which corresponds to the transgressive stage, is interpreted to have a weaker Huanghe effect and a stronger Changjiang and Korean rivers effect. Unit 1, which corresponds to the highstand stage when the sea level is the same as present and current circulation system is formed, is interpreted that sediments from Changjiang and Korean rivers are supplied to the research area through the current.