MASTER'S THESIS

Depositional modelling of tidal flats in Hong Kong: cases study: Ting Kok and Mai Po

Pang, Shun Chin

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Depositional Modelling of Tidal Flats in Hong Kong
(Cases Study: Ting Kok and Mai Po)

PANG Shun Chin

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Abstract

Particle size and sediment composition analysis are traditional methods for the evaluation of contemporary sedimentation and palaeo-environments. In order to investigate the Hong Kong tidal flat sedimentation, surface point and short core samples have been collected at several sub-environments of a transitional sandy flat (Ting Kok) and a muddy flat (Mai Po). Particle size parameters (mean, standard deviation, skewness and kurtosis) and sediment parameters (mineralogy, clastic sediment morphology, organic carbon, calcium carbonate and micro-fossil assemblage) are the core subjects for construction of a depositional tidal flat model. Episodic features also act as records for inferring the sedimentary processes. Lateral variation of sedimentation is more obvious than seaward progradation. The transect data show some parameters are strongly influenced by hinterland factors, temporary variation and sedimentary processes, especially at Mai Po. Based on several parameters, the short cores indicate that the upper sediment development is controlled by surface depositional processes, but the lower sediments are dominantly affected by bioturbation. This segregate evolution of sediments implies that different points of the sediment column are subject to contrasting processes.

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