

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.

Table of contents

| | |
|------------------------------------------------------------------------|-----|
| Declaration | i |
| Abstract | ii |
| Acknowledgements | iii |
| Table of contents | iv |
| List of Tables | ix |
| List of Figures | xi |
| List of Photos | xix |
| List of Maps | xxi |
| | |
| 1. Introduction | 1 |
| 1.1 Study Background | 3 |
| 1.1.1 Tidal flat zonation | 3 |
| 1.1.2 Facies distributions and controls | 6 |
| 1.2 Study approach and previous research on tidal flats | 11 |
| 1.3 Study aims | 15 |
| 1.4 Physical setting of Hong Kong and the tidal flats studied | 16 |
| | |
| 2. Methodology | 24 |
| 2.1 Field studies and sampling procedures | 24 |
| 2.1.1 Field sampling procedures | 25 |
| 2.1.2 Field work operation and the difficulties | 27 |
| 2.1.3 Field sampling techniques | 29 |
| 2.1.4 Laboratory sampling | 30 |
| 2.2 Particle size morphology | 31 |
| 2.2.1 Techniques used for particle size analysis | 31 |
| 2.2.2 Sample preparation for particle size analysis | 32 |
| 2.2.3 Comparison of Laser Particle sizer and Sedigraph techniques | 34 |
| 2.2.4 Particle Morphology | 41 |
| 2.3 Sediment composition | 42 |
| 2.3.1 Analysis of organic carbon by titration (chemical oxygen demand) | 42 |

| | | |
|-----------|----------------------------------------------------------------------------------------------------------------|-----------|
| 2.3.2 | Carbonate analyses | 43 |
| 2.3.3 | Microfossil content of the sediment – Optical and Scanning Electron Microscopes | 44 |
| 2.3.4 | Thin section studies and Energy Dispersive X-ray Analysis | 45 |
| 2.4 | Sedimentation rate | 46 |
| 2.5 | Data manipulation and statistical analysis | 47 |
| 2.5.1 | Particle size parameters | 47 |
| 2.5.2 | Dimensional measurement analysis of biological mound at Ting Kok | 48 |
| 2.5.3 | Inferential statistical analysis | 49 |
| 3. | Horizontal particle size results | 50 |
| 3.1 | Seasonal variation of particle size in surficial deposits at Ting Kok and Mai Po | 51 |
| 3.1.1 | Seasonal variation in particle size | 51 |
| 3.1.2 | Seasonal seaward trends in grain size | 54 |
| 3.2 | Detailed variation in phi mean along transects at Mai Po and Ting Kok | 60 |
| 3.2.1 | Seaward trends in phi mean | 60 |
| 3.2.2 | Particle mean size cumulative possibility data for seaward progradation analysis | 62 |
| 3.2.3 | Mathematical models of particle mean size for seaward progradation analysis | 68 |
| 3.2.4 | Variation of phi mean on the supratidal flats | 70 |
| 3.2.5 | Relationship between the phi mean and slope angle on the intertidal flats | 72 |
| 3.3 | The spatial and seasonal variability in sediment standard deviation at the Ting Kok and the Mai Po tidal flats | 74 |
| 3.3.1 | Overall seasonal variability in standard deviation | 74 |
| 3.3.2 | Detailed seasonal variation of standard deviation | 77 |
| 3.3.3 | Particle standard deviation and cumulative possibility data | 81 |
| 3.3.4 | Variation of standard deviation on the supratidal flats | 85 |
| 3.3.5 | Relationship between standard deviation and the slope angle on the intertidal flats | 86 |
| 3.4 | The horizontal and seasonal variation of skewness on the Ting Kok and Mai Po tidal flats | 88 |
| 3.4.1 | Seasonal variation of skewness | 88 |

| | | |
|-----------|--------------------------------------------------------------------------------------|------------|
| 3.4.2 | Seaward variation of skewness | 90 |
| 3.4.3 | Variation of skewness at the supratidal flats | 97 |
| 3.4.4 | Relationship between the skewness and the slope angle on the intertidal flats | 98 |
| 3.5 | The horizontal and seasonal variation of kurtosis at Ting Kok and Mai Po | 99 |
| 3.5.1 | Seasonal variation | 99 |
| 3.5.2 | Seaward variation of kurtosis | 101 |
| 3.5.3 | Variation of kurtosis at supratidal flats | 108 |
| 3.5.4 | The relationship between kurtosis and slope angle | 109 |
| 3.6 | Relationships between sediment parameters for different sub-environments and seasons | 111 |
| 3.6.1 | Relationships between grain-size parameters on the Ting Kok tidal flat | 113 |
| 3.6.2 | Relationships between grain-size parameters on the Mai Po tidal flat | 118 |
| 4. | Sedimentology results | 123 |
| 4.1 | Surficial features at Ting Kok and Mai Po | 123 |
| 4.1.1 | Surface runoff | 123 |
| 4.1.2 | Burrows and mounds | 127 |
| 4.1.3 | Other micro-features on the tidal flat | 132 |
| 4.2 | Surficial sediment compositions at the Ting Kok and Mai Po tidal flats | 138 |
| 4.2.1 | Properties of the clastic sediments on the tidal flats | 138 |
| 4.2.1.1 | Mineralogical parameters | 138 |
| 4.2.1.2 | Sphericity, roundness and surface morphology | 143 |
| 4.2.2 | Horizontal organic carbon distribution | 149 |
| 4.2.3 | Horizontal calcium carbonate distribution | 153 |
| 4.2.4 | Horizontal variation of the silicate micro-organism | 156 |
| 4.2.4.1 | Spatial variation of micro-organisms at Ting Kok and Mai Po | 164 |

| | | |
|-----------|-------------------------------------------------------------------------------------|-----|
| 5. | Vertical variation of sediment parameters | 168 |
| 5.1 | Vertical variation in particle size | 169 |
| 5.1.1 | Vertical variation of the sediment mean at Ting Kok and Mai Po | 169 |
| 5.1.2 | Vertical variation of standard deviation at Ting Kok and Mai Po | 172 |
| 5.1.3 | Vertical variation of skewness at Ting Kok and Mai Po | 177 |
| 5.1.4 | Vertical variation of kurtosis at Ting Kok and Mai Po | 180 |
| 5.2 | Vertical variation of sediment compositions and structures at Ting Kok and Mai Po | 183 |
| 5.2.1 | Vertical variation of organic carbon at Ting Kok and Mai Po | 183 |
| 5.2.2 | Vertical variation of calcium carbonate at Ting Kok and Mai Po | 186 |
| 5.2.3 | Vertical variation of siliceous micro-organism at Ting Kok and Mai Po | 188 |
| 5.2.4 | Other vertical sediment structure at Ting Kok and Mai Po | 191 |
| 6. | Discussion | 203 |
| 6.1 | Seasonal and horizontal variation of the sediment parameters | 203 |
| 6.1.1 | Seasonal and lateral variation of mean grain size at Ting Kok and Mai Po | 204 |
| 6.1.2 | Seasonal and horizontal variation of standard deviation at Ting Kok and Mai Po | 207 |
| 6.1.3 | Seasonal and lateral variation of skewness at Ting Kok and Mai Po | 209 |
| 6.1.4 | Seasonal and lateral variation of kurtosis at Ting Kok and Mai Po | 212 |
| 6.1.5 | Relationship between sediment parameters for different sub-environments and seasons | 214 |
| 6.2 | Discussion of sedimentology results | 218 |
| 6.2.1 | Surficial features at Ting Kok and Mai Po | 218 |
| 6.2.2 | Surficial sediment compositions at Ting Kok and Mai Po | 222 |
| 6.2.2.1 | Clastic sediment properties at Ting Kok and Mai Po | 223 |
| 6.2.2.2 | Total organic carbon at Ting Kok and Mai Po | 224 |
| 6.2.2.3 | Calcium carbonate at Ting Kok and Mai Po | 226 |

| | | |
|-----------|-------------------------------------------------------------------------------------------------------------|------------|
| 6.2.2.4 | Silicate micro-organism at Ting Kok and Mai Po | 227 |
| 6.3 | Vertical variation of sediments at Ting Kok and Mai Po | 228 |
| 6.3.1 | Vertical variation of sediment size parameters at Ting Kok and Mai Po | 228 |
| 6.3.2 | Vertical variation of organic carbon, calcium carbonate and siliceous micro-organism at Ting Kok and Mai Po | 231 |
| 7. | Conclusion | 234 |
| 7.1 | Spatial and temporal variation of sediment parameters | 234 |
| 7.2 | Vertical variation of sediment parameters | 241 |
| 7.3 | Tidal flat environmental management | 242 |
| | Appendices | 244 |
| | Reference | 250 |
| | Curriculum Vitae | 256 |