

## The planform stability of embayed beaches on the west coast of Peninsular Malaysia

### ABSTRACT

Embayed beaches can be found along the West coast of Peninsular Malaysia and they are subject to beach's dynamic changes. Some part of the coast along the West coasts have experienced severe erosion for several decades, in spite of the construction of various coastal defence structures. Therefore, it is crucial to predict the stability of embayed beaches along the West coast of Peninsular Malaysia. The planform stability of embayed beaches was established by applying the MEPBAY model. It was found that the total number of embayed beaches along the West coast of Peninsular Malaysia is 139 with 73 % were natural embayed beaches and 27 % were artificial embayed beaches. From the analyses, out of the 139 embayed beaches; 82 % were in static equilibrium and 18 % were in dynamic state. The causes of the instability of embayed beaches are the topography of the embayed beach, discrepancies in the design of previous coastal structures, influenced by wave climate as well as human intervenes without prior investigation of the biological and physical effects towards the beach. Furthermore, the applicability of engineering solutions applied on embayed beaches that are in either dynamic equilibrium can be predicted using MEPBAY programme.

**Keyword:** Bay; Static beach; Dynamic beach; Parabolic bay shape; Erosion