EXPERIMENTAL STUDY OF WAVE SET-UP ON THE MACRO-INTERTIDAL BEACH

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Abstract: Macro-Intertidal beach is characterized by periodic movement of shorelines and surfzones. It is very different environment compared to the normal beach in terms of wave forcing, wave induced currents and sediment transport. Wave set up experiment is executed using a series of gauges and camera images on the west coast of Korea. The coast is composed of intertidal beach and mudflat and tidal ranges are from 5 m to 8 m. In order to observe set up phenomena, accurate topography and shoreline information is essential. Intertidal beach provides good environment for this experiment in setting up instruments such as wave and pressure guages and measuring topography during an ebb tide like scaled 1 laboratory tank after water drained off. Location of shoreline is analyzed using camera monitoring techniques and its altitude is decided from the beach topography. Wave setup is calculated based on the waterline location taken by camera together with profile and MSL measurement data. From time lapsed images, averaged shoreline on the image is decided and its ground location is calculated based on the collinearity equation. The rectified image of shoreline indicates the location of waterline and its altitude from the profiles which were measured during an ebb tide. This study provides basic information to be considered for coastal practices on the macro-intertidal beach.