

عنوان مقاله:

SOME ASPECTS OF EROSION WAVES AT KUNDUCHI BEACH, DAR ES SALAAM, TANZANIA

محل انتشار:

چهارمین کنفرانس بین المللی سواحل و بندر و سازه های دریایی (سال: 1379)

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خلاصه مقاله:

The area north of the Dar es Salaam city is endowed with beautiful sandy beaches and high concentration of tourist beach hotels that are threatened by coastal erosion. In order to protect the buildings and land, coastal erosion must be controlled by mitigation options that are based on scientific data. The wave and current climate along the East African region are generally controlled by the seasonal monsoon winds. During the Northeast monsoon period when winds blow from the Northeast, the wind-generated waves approach the coast from the northerly sector and produce long-shore currents with a southerly component. During the Southeast Monsoon period the wind direction is reversed and so is the wave and current climate. As such the erosion of the coast is expected also to be periodic in pattern and intensity. The study area is Kunduchi Beach, which is located 10 km north of Dar es Salaam City, Tanzania. The beach lies on the west of the Zanzibar Channel, which separates Zanzibar from the Mainland. Study of the near-shore waves was carried out by deploying wave gauges on the tidal flat at about 100 m from the beach and in 5 – 10 m deep water, about half a kilometre from the beach. The pressure gauges can measure up to 2.5 bar of absolute pressure. Each pressure sensor was connected to a 12-bit XR440-M data logger with a capacity of 86400 readings. Waves were recorded at a sampling frequency of 1 Hz on different dates during . The data used are those recorded in April (during Northeast monsoon winds) and September (during the Southeast monsoon winds). According to the measurements, the highest tide level is +2.5 m in the period of September. During low tide, the tidal flat is dry. 580 4th international conference on coasts, ports & marine structure, Nov 2000 Shahid Rajaei Port Complex, Bandar Abbas Results show that the deviation of the surface elevation from the Gaussian distribution does not vary very much during flooding and ebbing (std (flood) = 0.0867, std (ebbing) = 0.0954). However, it increases almost twice during high water (std (high water) = 0.14), such that the probability density function of the surface elevation becomes broad and extended. The power spectrum at high tide is 3-peaked and is divided into three frequency regions; long waves ($f < 0.04$), swells ($0.04 < f < 0.1$) and wind waves ($f > 0.1$). During flooding and ebbing, the power spectra are broad and low-peaked, which means waves interact with the flooding and ebbing tides to induce breaking. Significant wave height is linearly ... related to mean water level. It is during high water that wave activi

کلمات کلیدی:

Tide, Waves, Spectra, Wave height, Peak period, Eroding beach

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