

**THE BEHAVIOR MORPHODYNAMICS OF AN OBLIQUE SANDBAR IN A MICROTIDAL ENVIRONMENT, ANJOS COVE, ARRAIAL DO CABO (RIO DE JANEIRO STATE) BRAZIL**

*João Wagner Alencar Castro<sup>1</sup>; Agenor Cunha da Silva<sup>2</sup>*

<sup>1</sup> UNIVERSIDADE FEDERAL RIO DE JANEIRO - UFRJ; <sup>2</sup> UFRJ

**RESUMO:** The morphodynamics of a oblique sand bar in a microtidal environment located on a cove semi closed in Arraial do Cabo, Rio de Janeiro State - Brazil, was examined between 1933 - 1991 (58 years) by bathymetrics charts, scale 1:10.000. This investigation reveals that the oblique sand bar is dynamic over the time interval studied with offshore extents of up to 2100 m, length of 685 m and average depth of 1 - 2 m, generally increasing in the southwest direction. The results show that the oblique sand bar migrated preferable shoreward during moderate to storm conditions from the northeast quadrant. The movement of sediments and the sand bar morphology is induced mainly by waves and tide their associated currents. The increase in the significant wave height from northeast disturbed the general mean current behavior, which was parallel to the bar crest during moderate energy conditions. These conditions explain the low rate of migration of the oblique sand bar over the Anjos cove platform was 1.72 m/year. This rate is much less than those reported from microtidal environments. The formation of these sandy body is related to storms and northeast flows, which cause large volumes of sediment to be transported downshelf and offshore by downwelling bottom currents generated by coastal set-up. The result is sand movement onto and across the sand body surface down to water depths of 1 - 2 m. The thick sandy lenses of the Anjos shelf is interpreted as topographically induced lee-side sand bodies, similar to regional coastal dunefields.

**PALAVRAS-CHAVE:** OBLIQUE SAND BAR; MORPHODYNAMICS; ENVIRONMENTS MICROTIDAL.