

Numerical characterisation of the longshore sediment dynamics of Buarcos beach, West coast of Portugal.

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Littoral 2002, The changing coast. EUROCOAST/EUCC, Porto, Portugal, pp. 369-374. (2002).

Summary

The longshore sediment dynamics at Buarcos beach, West coast of Portugal, was investigated. Two seasonal wave regimes were identified. The seasonal longshore transport contributions as functions of wave directions and wave heights were quantified, based on numerical modelling. The results show the predominant contribution to the longshore transport of the directional sector N265–285° in both seasonal wave regimes. Waves with Hrms between 2.0–2.5m and between 1.0–1.5m have the highest contribution to the Winter longshore transport and the Summer longshore transport, respectively. In Winter a substantial percentage of the longshore transport, 75%, is generated by waves with height above 2.0m. The innovative methodology here applied, based on the discretisation of the seasonal longshore transport in terms of wave direction and wave height contributions, allows to address immediately the effect of unusual meteorological conditions on the longshore transport.

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