

GIS AND REMOTE SENSING TECHNIQUES APPLIED TO CHARACTERIZATION OF MORPHOSEDIMENTARY FEATURES OF SÃO SEBASTIÃO CHANNEL, SÃO PAULO STATE, BRAZIL

1Conti, L.A., 1Furtado, V.V., 2Bonetti Filho, J. 1-Instituto Oceanográfico, Universidade de São Paulo, São Paulo, Brazil.; 2-Universidade Federal de Santa Catarina, Florianópolis, Brazil

The present work aimed the analysis of geoprocessing techniques applicability to the study of submerged coastal environments morphology and sedimentology in São Sebastião Channel (northern coast of São Paulo State, Brazil). A Digital Terrain Model was elaborated using bathymetric data. A number of derived products were obtained in order to allow a good analysis of the submerged relief. The sedimentary data, collected in six field trips, were submitted to similar processes of digital modeling. Maps expressing the distribution of sedimentological parameters as mean diameter, sorting, percentages of clay, silt, sand and carbonates were produced. Orbital images acquired by LANDSAT's TM sensor were also analyzed seeking for the characterization of suspended sediment and temperature distribution on its surface waters. The data integration, made in a Geographic Information System, allowed the elaboration of a synthesis map and charts of morphosedimentary classes. The results indicated that in the northern part of the Channel, at the continental side, dominates a big region of low depths, where pelitic sediments are predominantly deposited with high concentrations of suspended material. The main channel axis is restricted to an area nearby São Sebastião Island. Between these two features, there is a spit form structure outlined by the 5 m isobath. In the southern part of the channel it may be distinguished a big tabular feature composed basically by fine and very fine sand, with silt contributions. To the north of this feature it was recognised an expressive muddy area with higher depths, nominated "secondary runnel".