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Spatio-Temporal Variation of Suspended Sediment Concentration in the near Shore Waters, Southern Karnataka, India

Authors : Ateeth Shetty, K. S. Jayappa, Ratheesh Ramakrishnan, A. S. Rajawat

Abstract : Suspended Sediment Concentration (SSC) was estimated for the period of four months (November, 2013 to February 2014) using Oceansat-2 (Ocean Colour Monitor) satellite images to understand the coastal dynamics and regional sediment transport, especially distribution and budgeting in coastal waters. The coastal zone undergoes continuous changes due to natural processes and anthropogenic activities. The importance of the coastal zone, with respect to safety, ecology, economy and recreation, demands a management strategy in which each of these aspects is taken into account. Monitoring and understanding the sediment dynamics and suspended sediment transport is an important issue for coastal engineering related activities. A study of the transport mechanism of suspended sediments in the near shore environment is essential not only to safeguard marine installations or navigational channels, but also for the coastal structure design, environmental protection and disaster reduction. Such studies also help in assessment of pollutants and other biological activities in the region. An accurate description of the sediment transport, caused by waves and tidal or wave-induced currents, is of great importance in predicting coastal morphological changes. Satellite-derived SSC data have been found to be useful for Indian coasts because of their high spatial (360 m), spectral and temporal resolutions. The present paper outlines the applications of state-of-the-art operational Indian Remote Sensing satellite, Oceansat-2 to study the dynamics of sediment transport.

Keywords : suspended sediment concentration, ocean colour monitor, sediment transport, case – II waters
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