

The analysis of 20°C and 26°C isotherm variability over Bay of Bengal

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This work represents the analysis of the internal dynamics in the Bay of Bengal (BOB) in terms of two isotherms depths of 20°C (Z20) and 26°C (Z26). The analyses of Z20 and Z26 variability are performed with long term (1871 – 2008) ocean temperature data from Simple Ocean Data Assimilation reanalysis (SODA) and temperature climatology from World Ocean Atlas 2001 quarter degree products (WOA2001). The isotherm depths show strong interannual and seasonal variability which are caused by several forcing factors both local and remote. The isotherm depths Z20 and Z26 are estimated from the vertical profile of the temperature with interpolation technique. Then the climatology is derived from the SODA data to show a mean annual variation and to compare with WOA2001. The interannual variations of Z20 and Z26 are analyzed at several locations near different river mouth with their discharges to know their effects. The time series were computed for constant latitude and different longitudinal points to understand the wave propagation along those sections. For the year 2008 the monthly distributions show two different states for Z20. The depth range of 20°C isotherm is 120-160 m for pre and post monsoon time over coastal and central BOB while in the monsoonal seasons range varies between 60-100m for coastal and southern BOB. The Z26 distribution also shows similar pattern of Z20. However climatology data shows different as the pattern is completely opposite if we compute Z20 and Z26 from WOA2001. The wind forcing and oceanic heat are very much important for the Z20 variation.

Biography

Myself Mr. Tarumay Ghoshal, Phd Scholar at Centre for Oceans, Rivers, Atmosphere and Land Sciences (CORAL), Indian Institute of Technology Kharagpur, since 2010. I served as Officer Geophysics at Directorate General of Hydrocarbons, Ministry of Petroleum and Natural Gas, Govt. of India. I have done M.Sc (5 yrs. Integd.) in Exploration Geophysics from I.I.T Kharagpur and with first class throughout my academic career. My area of research is data assimilation and ocean modeling. I have achieved best student paper certificate at the conference OSICON 2011 in Chennai. I have done projects at NGRI Hyderabad and ONGC Dehradun.

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