

**SEASONAL AND SPATIAL VARIATION OF WIND SPEED & THE
THERMOCLINE DEPTH IN THE INDIAN OCEAN**

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ABSTRACT

Water temperature profiles from ARGO drifters and wind data from the Research Moored Array for African-Asian-Australian Monsoon Analysis and Prediction (RAMA) mooring from 2010 to 2012 within the selected Bay of Bengal (BoB), Equator (EQ) and South of Arabian Sea (SoA) area are used to assess the seasonal and spatial variation of wind speed and thermocline depth in the Indian Ocean and to assess whether there were any association between wind speed and thermocline depth within region and between regions. Bay of Bengal and Equator showed a distinct semi-annual variability with deep thermocline depth and maximum wind speed during Northeast and Southwest Monsoons than that of South of Arabian Sea. Minimum wind speed and shallow thermocline depth observed during spring and autumn Inter-Monsoons of BoB and EQ. Inter-Monsoons is not clearly defined at SoA. Wind speed of BoB showed positive correlation with its thermocline depth.

Wind speed of EQ showed significantly negative correlation with thermocline depth of SoA and wind speed of SoA showed significantly positive correlation with thermocline depth of BoB. However, no significant correlation is observed in the particular region and among the region with wind speed and thermocline depth. Thus, wind speed may influence the thermocline depth considerably, the other oceanic process too may exert substantial influence on thermocline depth. This study provides baseline data regarding the wind speed and thermocline depth at the regions in the Indian Ocean that are useful for future studies.

Key words: Indian Ocean, wind speed and thermocline depth