

USE OF REMOTE SENSING DATA TO IDENTIFY TEMPERATURE VERTICAL STRUCTURE OF WATERS AROUND SRI LANKA

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Temperature is one of the most significant parameters in descriptive oceanography. The ocean can be divided into three layers: surface, thermocline, and deep layer based on the temperature. The upper layer is known as the mixed layer, where the temperature is almost equal to the surface water temperature. The deep layer also has a constant temperature throughout. The thermocline is the layer between the mixed and deep layers, where a rapid temperature drop can be seen. This study embodies the temperature structure around Sri Lankan waters using ocean modeled data based on satellite observations. Vertical temperature data were obtained from the Copernicus Marine Environment Monitoring Service (CMEMS) for two years, from 2018 to 2019. These data were in daily composites of 0.25-degree spatial resolution within an area of latitudes between 0 °N – 20 °N and longitudes between 70 °E – 90 °E. Parameters included in the dataset were the date, latitude, longitude, depth and seawater temperature. R statistical language was used to read the data and to plot the temperature maps. The results showed that the surface mixed layer spans up to 50 m while its temperature fluctuates between 25 – 30 °C. The seasonal variability of thermocline depth varies between 60 – 175 m deep. The temperature at thermocline varies between 19 – 23 °C, and the warmer water penetrates more than 75 m depth throughout the year.

Keywords: Ocean temperature, Remote sensing, Thermocline