

Sea Surface Temperature Measurement from TMI and MODIS Data

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Sea Surface Temperatures (SST) is one of the geophysical parameters required by researchers for various applications such as climatology, global changes in sea surface temperature, weather prediction, fisheries, and oceanography dynamics (eddies, Gyre, front and upwelling). SST can be obtained from direct measurements or from satellite remote sensing data. Determination of sea surface temperature from satellite remote sensing can be done either using thermal infrared sensors or passive microwave. Generally, sea surface temperature measurement is done by using infrared sensors in the course of free of cloud cover. This is different when using a microwave sensor because thermal radiation at microwave frequencies are less to be affected by cloud cover. This research applied the applications of infrared sensor, Aqua-MODIS and passive microwave data, TRMM Microwave Imager (TMI) for SST in Indian Ocean. Aqua-MODIS can generate SST on coastal area but constrained by the cloud cover otherwise, TMI data does not affected by the cloud cover but can not include sea surface temperatures along the coast caused by the side lobe contamination. The combination of those two data present the free cloud cover SST distribution including coastal area.

Key words: sst, infrared sensor, passive microwave sensor, MODIS, TMI