

Study of Inter annual and Intra Seasonal cycle of Rainfall using NOAA/INSAT OLR and Validation of daily 3B42RT precipitation data sets across India and neighboring seas

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In view of the thermally driving nature of tropical general circulation, deep convection is a key parameter for highlighting the energy source that drives tropical atmospheric motion. Regardless of their flaws in estimating deep convection, the OLR can, nevertheless, offer reasonably good estimates for deep convection and rainfall in most tropical regions. In the present study INSAT OLR datasets for 7-years (1993-1999) are used to examine the migration of heat sources and sinks over India and neighboring seas. The locus of heating is associated with Indian monsoon system. Since the motions are driven by gradients of heating and not the absolute magnitude of the sources and sinks themselves, the heat sinks are integral parts of Indian monsoon systems. Thus study of mean quantitative annual cycle of rainfall in terms of OLR is useful for farmer community and power generation industries over India.

Secondly, anomaly pentad OLR data sets ($1^{\circ}\times 1^{\circ}$) are used to examine onset, withdrawal and break monsoon situations of summer monsoon season over India. Next, having identified active and inactive phases of intra seasonal oscillations during boreal summer and boreal winter using NOAA OLR for 25 years (1974-1999), their impact on monsoon systems and tropical cyclones over the Bay of Bengal are also investigated. Finally, available 3B42RT data sets, which are real time multi satellite precipitation product (0.01 mm/hr) are validated with rain gauge data across India and island stations.