

Spatial and temporal variability of NOAA-derived sea surface temperature around Sri Lanka for 1996-1 999

Sea surface temperature (SST) maps of waters around Sri Lanka within the area of latitudes between 4.5N-11N and longitudes between 78E-84.5E have been produced using relatively cloud free remotely sensed AVHRR data of 1km resolution from NOAA for the period 1996-1999. Monthly and seasonal composites of SST are made as well. The seasons are defined approximately as follows: Northeast Monsoon (December-March), First Inter Monsoon (April-May), Southwest Monsoon (June-September) and Second Inter Monsoon (October-November). Spatial and temporal variability of SST has been studied dividing the selected area into seven sub areas of varying sizes. The sub areas are chosen such that at least one sub area is located in each of the six directions; West, Southwest, South, Southeast, East and Northeast. Low cloud cover regions within each sub area were replaced by nearest neighbour averages using a 3x3 median filter. Monthly and seasonal averages for each sub area were calculated. Regions with heavy cloud cover were excluded from the analysis.

A general comparison of mean temperatures of sub areas reveals that highest sea surface temperatures of up to 30.5 °C have been recorded in April of 1997 in many sub areas. The year 1997 appear to be the warmest of all four years analyzed. Annual seasonal nature of temperature variation is apparent in all sub areas considered. It can be seen that western waters are mostly cooler during the Southwest Monsoon. No such sharp features are exhibited in

North or Northeast regions during Northeast Monsoon. In all the sub areas derived temperatures are higher during the First Inter Monsoon period than any other season. The sub areas in the West, Southwest and South record lower temperatures through out the year than any other sub area. This is acceptable since winds in southwest Monsoon are much stronger compared to Northeast Monsoon winds.