E1-33 Variation of Outgoing Longwave Radiation in the Indian Ocean and its relationship to rainfall of Sri Lanka

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It is well established now that Outgoing Longwave Radiation (OLR) is a measure of convective activity of a region. Convective activity and OLR are inversely related. In general deeper the convection, higher would be the cloud tops. The cloud tops at high altitudes have low temperature and thus emit less OLR.

This study investigates the OLR variation in the Indian Ocean and its influence on terrestrial rainfall over Sri Lanka by using statistical correlation and time series analysis. A relationship of OLR field between the Western and Eastern Indian Ocean has been found. OLR anomalies vary everywhere in the study domain (30^0N-30^0S,50^0E-120^0E) and most prominently in the Indonesian region (10^0N-10^0S, 95^0E-120^0E), southern part of the Indian Ocean (15^0S-25^0S, 77.5^0E-95^0E), and Arabian Sea (AS) (25^0N-15^0N, 55^0E-75^0E). In general there is a decreasing trend of OLR in the whole region after the 80th decade. There is evidence for connections between OLR peaks and El-nino events and there is a gradual decreasing trend of OLR in the region AS before the El-Nino onset. Relationship between Sri Lankan rainfall and OLR for the South-West Monsoon, and North-East Monsoon, has been found and all the subregions show reliable negative lag correlation coefficient between OLR and rainfall.