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A new set of Indo-China monsoon indices

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Southeast Asia often suffers from severe floods and droughts, and these disasters have caused huge socio-economical impact to the region. For example, Thailand alone lost 50 million USD due droughts in 2010 and lost another 45.7 billion USD due to floods in the following year. Thailand flood in 2011 alone has caused an acute shortage of HDD in the global market, which shows the extent of the climate influence on the interconnected global economy in the modern world. Though several studies in the past have tried to link the region′s rainfall with the dominant modes of tropical climate variations, there still exist a lot of uncertainties. In a recent study, it is found that El Nino/Southern Oscillation (ENSO) and the recently found ENSO Modoki influence the southern Myanmar and Thailand rainfall but only during March-May. Interestingly, from the correlation and composite analyses, it is found that the variation in the large-scale monsoon influences the local monsoon wind and thereby the rainfall anomalies over those two regions through anomalous transports of moisture in boreal summer and fall seasons in addition to the boreal spring season. Furthermore, the regional monsoon winds that influence the local rainfall is in fact connected to the basin-scale Indian Monsoon and the Western North Pacific Monsoon through the large-scale processes. The variations of the regional monsoons are captured by a set of newly defined indices.