

Inter-annual variability of summer monsoon rainfall over Myanmar

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Abstract: Rainfall over Myanmar has large inter-annual variability causing droughts and floods in many years. In the study, rainfall variability (in monthly scale) over Myanmar during summer monsoon has been examined using observed data. It is found that monthly rainfall in June, July and August months do not have any relation among each other, indicating that monthly rainfall received in Myanmar in these 3 months vary due to different mechanisms of rainfall variability have to be studied. Using composite wind analysis for excess and deficit rainfall years, it is found that deficiency of rainfall occurs when south-westerly winds at 850 hPa are weaker over the region in June. During excess rainfall years, south-westerly wind anomalies seen in June turn to stronger and milder westerly winds in July and August, respectively. However, a cyclonic anomaly is seen over North Bay of Bengal adjoining western coast of Myanmar in all the 3 months. It is found that the Myanmar rainfall is correlated positively with the sea surface temperature over central Pacific Ocean. An empirical orthogonal function (EOF) analysis of monthly and seasonal mean rainfall over the region has been carried out. The leading mode (EOF-1) shows coherent spatial patterns between the Indian monsoon rainfall over east and central parts of the India and rainfall over the western Pacific. The second leading mode of seasonal rainfall shows a trend in rainfall during the study period.