

ABSTRACT:

This paper assesses recent changes in extremes of annual rainfall in Peninsular Malaysia based on daily rainfall data for ten rain-gauged stations over the period 1971-2005. Eight indices that represent the extreme events are defined and analyzed. Maps of trends for these indices, which are extreme dry spell (XDS), extreme rain sum (XRS), extreme wet day intensities at 95% and 99% percentiles (I95 and I99), proportion of extreme wet day to the total wet day (R95 and R99), and frequency of extreme wet day at 95% and 99% percentiles (N95 and N99), were analyzed based on annual data and seasons. When the indices are evaluated annually, the Mann-Kendall and linear regression trend tests showed increasing trends in the extreme intensity indices (I95 and I99) at two stations. A significant decrease in N99, associated with the frequency of extremely wet days, was observed at 60% of the stations. The change points for these indices are found to occur in the period of the 1980s. There is no significant trend detected for XDS, XRS, and proportion of extreme rainfall over total rainfall amount indices during the period considered in this study. Descriptive analysis of indices during the monsoon period showed that the annual spatial pattern for the peninsula is very much influenced by the northeast monsoon where the highest mean values for majority of the indices occur during this time period.