Analysis of rainfall indices at JPS Ampang Station

ABSTRACT

Understanding characteristics of rainfall of a region could provide vital information for management of water resources. This study aims to explore the spatial pattern and trends of the daily rainfall data based on seasonal rainfall indices. Rainfall indices are adopted to explain main characteristics of rainfall such as the total amount of rainfall, frequency of wet days, rainfall intensity, extreme frequency, and extreme intensity. In particular, these five rainfall indices are used to capture the changes in a variety of aspects of rainfall distribution at a rainfall station, namely JPS Ampang station in Malaysia. The correlation between total amount of rainfall (TAR), frequency of wet days of at least 1 mm of rain (FREQ), mean rainfall amount on wet days or rainfall intensity (RI), frequency of wet days exceeding the 95th percentile (XFREQ) and rainfall intensity exceeding the 95th percentile (XI) indices is estimated. Results show that there is a strong positive correlation between TAR and extreme indices (XFREQ and XI). There is also high positive correlation between TAR and RI. However, a moderate positive correlation is shown between TAR and FREQ as well as between extreme indices (XFREQ and XI) and FREQ.This indicates that higher XFREQ, XI and RI will result in higher value of TAR at JPS Ampang station. Annual rainfall indices show that higher indices including extremes (XFREQ and XRI) are more prominent during La Nina while lower indices are more prominent during El Nino.