

## TREND DALAM CORAK HUJAN TAHUNAN EKSTRIM DI SEMENANJUNG MALAYSIA DARI 1975-2004

(Trends in Annual Extreme Rainfall Patterns  
in Peninsular Malaysia from 1975-2004)

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### ABSTRAK

Trend dalam corak hujan maksimum tahunan di Semenanjung Malaysia telah dianalisis menggunakan rekod hujan harian di 50 stesen dalam jangkamasa 30 tahun. Dalam kajian ini, hujan maksimum tahunan ditakrifkan sebagai jumlah hujan harian maksimum yang direkodkan pada sesebuah tahun. Kedua-dua monsun iaitu Monsun Timur Laut (MTL) dan Monsun Barat Daya (MBD) diasingkan untuk melihat pengaruh monsun ke atas hujan maksimum tahunan ini. Ujian korelasi Rank von Neumann dijalankan untuk mengecam sebarang korelasi antara tahun dan seterusnya analisis Kendall digunakan untuk mengecam trend yang signifikan. Magnitud bagi stesen yang menunjukkan tren menaik yang signifikan dikira untuk mendapatkan nilai perubahan dalam jangkamasa satu kurun. Keputusan mendapati bahawa hanya 10% daripada stesen yang dikaji mengalami peningkatan atau penurunan yang signifikan bagi hujan maksimum tahunan. Selain dari itu, kedudukan sesebuah stesen itu didapati memberi pengaruh ke atas corak hujan ekstrim yang diterima oleh kawasan tersebut.

*Kata kunci:* Hujan maksimum tahunan; hujan ekstrim; Monsun Timur Laut; Monsun Barat Daya; ujian Kendall; ujian Rank von Neumann; ujian regresi linear

### ABSTRACT

Trends in annual maximum rainfall in Peninsular Malaysia have been analysed using daily rainfall records at 50 stations for 30 years. In this study, annual maximum rainfall is defined as the maximum daily rainfall amount recorded in a particular year. Both North-East Monsoon and South-West Monsoon are separated to identify their effect on the extreme rainfall. Rank von Neumann correlation test was performed to detect any correlation between years and followed by Kendall test to detect any significant trend. The magnitude of trends for stations with significant trend was derived from linear regression and computed to get the change value for a century. The results show that only 10% of the stations under study experience either significant increasing or decreasing trends in annual maximum rainfall. Apart from that, the pattern of extreme rainfall received is influenced by respective stations' location.

*Keywords:* Annual maximum rainfall; extreme rainfall; North East Monsoon; South-West Monsoon; Kendall test; Rank von Neumann test; linear regression test

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