

臺灣梅雨季降雨季內高峰期變化研究

卓盈旻 盧孟明
臺灣大學大氣科學系

摘要

台灣年降雨的季節分布呈現雙峰的型態，分別為 5-6 月梅雨鋒面和 7-10 月颱風活動帶來的雨量，2 個高峰值發生在 6 月和 8 月。1-3 月期間雨量僅佔全年約 13%，4-6 月雨量佔全年約 31%，在 5 月中旬出現第一次乾濕相位的轉變，之後雨量減少，然後在 8 月初進入第 2 次的降雨高峰期。

梅雨是臺灣在春夏季節轉換時最重要的天氣現象，降雨主要發生在第 28 候(5/16-5/20)和第 34 候(6/15-6/19)之間，雨量從 5 月中開始逐漸增加，到 6 月上旬達到高峰，然後雨量迅速減少。5 月降雨主要發生在台灣北部，到 6 月則是發生在台灣西部，以西南部平地和中南部山區為主，雨量最多可達到梅雨季總雨量的 15%，東北部雨量則相對偏少。

為了瞭解台灣梅雨季降雨季內演變特徵和空間差異，利用台灣測站的候雨量資料進行群聚分析，依降雨氣候演變特徵可以客觀地辨識出 2 種季內降雨高峰期型態。第 1 種的降雨從 24 候開始增多，高峰發生在第 33 候(6/10-6/14)，降雨強度約為梅雨季總雨量氣候平均的 13.5%，降雨主要出現於台灣南部地區，然後降雨逐漸減少，乾濕之間的降雨變化差異大。第 2 種降雨一開始比第 1 類多，同樣在 5 月底至 6 月初達到高峰時，但降水比第 1 類少，最大降雨強度約為 11%，之後降雨迅速減少，乾濕之間的降雨變化差異較小。

The subseasonal peak precipitation in Taiwan during the Meiyu season

Yin-Min Cho Mong-Ming Lu
Department of Atmospheric Sciences,
National Taiwan University

Abstract

Taiwan has double rainy season, the Meiyu in May-June and the Typhoon rains in August-October. The rainfall peaks are in June and August. The rain occurs in the January-March period is about 13% of the annual precipitation, while there is about 31% from April to June. The first intensive rainy period after the dry season occurs in mid-May. After the rainy season, there is a dry period and followed by another peak rainfall in early August.

The annual rainfall of Taiwan is largely influenced by the East Asian monsoons. During the seasonal transition from Spring to Summer, the rainfall is frequently affected by the passage of Meiyu front systems. Climatologically, the precipitation of Meiyu season lasts from the pentad 28 (5/16-5/20) to 34 (6/15-6/19). The rainfall begins in mid-May and the maximum rainfall of the rainy season in early June. During the onset of the Meiyu in May, it exhibits a pronounced maximum over northern Taiwan. Except for the northeastern areas, most stations over the western plains and the mountainous stations occurs the largest rainfall during the peak of the Meiyu, which can reach up to 15% of its precipitation from May to June.

The rainfall regimes of Taiwan are investigated using the 60-yr daily rainfall data from 21 conventional stations around Taiwan (1960–2019). In order to identify the evolution feature and the distinct spatial characteristic in Taiwan during the Meiyu season, the k-means clustering analysis method was used in the study. Based on the result of clustering, we identify two patterns for the precipitation data of Taiwan. Two clusters show that rainfall began to increase from pentad 24, and the peak occurred in pentad 33 (6/10-6/14). Before the peak period, the second cluster (C2) receives more rainfall than cluster 1 (C1). During the peak period, C1 and C2 receive 13.5% and 11% of the Meiyu season rainfall, respectively. After the peak period, C2 shows an abrupt decrease in precipitation. The change of rainfall shows large increases in C1.