

臺灣的西南風劇烈降雨與監測指標初步分析

Preliminary Analysis of Severe Rainfall and Monitoring Index Caused by Southwesterly Flow in Taiwan

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摘 要

臺灣西南部地區在每年5至9月時，易受西南風增強影響而有劇烈降雨事件發生。國家災害防救科技中心為了對梅雨季的西南風劇烈降雨提供預警資訊，以850百帕低層水氣通量，建立梅雨季西南氣流監測指標。當高水氣通量事件發生，表示臺灣附近的水氣含量較高，西南部地區易發生豪雨等級以上的劇烈降雨。分析結果顯示，水氣通量指標值超過200的事件僅佔總事件的5%，相當適合用來作為高水氣通量事件的篩選標準。

梅雨季的分析結果顯示，高水氣通量指標與西南風所造成的劇烈降雨有相當不錯的關係，排名前10的事件中有高達8起事件達豪雨以上等級，顯示水氣通量指標與劇烈降雨有相當不錯的關係。然而，雖然颱風季的高水氣通量也會造成劇烈降雨，但排名前10的事件僅有4起事件達豪雨等級。這是因為颱風及其外圍環流的高風速會提高監測區域的水氣通量，但若沒有適合的風向配合，水氣無法傳送至西南部陸地，使得臺灣的降雨偏少。因此，未來可持續調整監測區域或增加風向參數，以提高水氣通量指標於颱風季防災預警的適用性。

關鍵字：西南風、劇烈降雨，水氣通量指標、防災預警

Abstract

In order to provide early warning information for the severe rainfall, NCDR used 850hPa watervapor flux to establish a southwesterly flow monitoring index. The result shows that the index exceeds 200 is often accompanied by severe rainfall event. In Mei-yu season, there are 8 of the top 10 high index events reached extremely heavy rain level, which indicating the southwesterly flow monitoring index has a pretty good relationship with severe rainfall. In contrast, only 4 of the top 10 events in the typhoon season reached extremely heavy rain level. This is because the high wind speed caused by typhoon would increase the watervapor flux, but there is no suitable wind direction to transmit moisture and resulting in less rainfall. Therefore, we will continue to adjust the monitoring area or increase the wind direction parameters to improve the applicability of the southwesterly flow monitoring index for disaster prevention and early warning during the typhoon season.

Key words: southwesterly wind, severe rainfall, southwesterly flow monitoring index