

臺灣至華南地區春季到梅雨季強對流天氣分析~ 「低層暖平流驅動型」之熱、動力物理量特徵個案探討

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摘 要

強對流天氣形成基本是由熱力不穩定、動力輻合舉升及水氣三條件所建構，本研究是從不穩定條件和強迫機制出發，主要針對臺灣至華南地區春季至梅雨季強對流天氣其中的「低層暖平流驅動型」進行實務應用探討。該類型天氣主要特徵是源於低層強烈的暖濕平流，700hPa以下位在槽前的低層噴流是重要的形勢配置。研究重點包括探索該型天氣系統有關之監測資料及主要熱、動力物理參數變化，並應用 AWIPS II NSHARP中豐富多元的探空資料分析若干典型實例，以利瞭解這型強對流天氣關鍵物理量的變化特徵。研究結果發現關鍵熱、動力物理參數具有實用價值，可作為強對流天氣的診斷分析和即時預報之參考。

關鍵字：NSHARP, 低層暖平流驅動型，低層噴流

Analysis of Severe Convective Weather during the Spring to Mei-yu Season in Taiwan and Southern China: A Case Study on the Characteristics of Thermal and Dynamic Physical Parameters in the "Low-Level Warm Advection-Driven" Type.

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Abstract

The formation of severe convective weather is fundamentally constructed by three conditions: thermal instability, dynamic convergence lifting, and moisture. This study aims to explore the practical application of the "low-level warm advection-driven" type of severe convective weather, which occurs during the spring to Mei-yu season in the Taiwan and southern China region, starting from the unstable conditions and forcing mechanisms. The primary characteristic of this weather type is the strong warm and moist advection in the lower levels, with the presence of a significant low-level jet below 700 hPa ahead of the trough being an important configuration. The research focuses on investigating the relevant monitoring data and the variations in key thermal and dynamic physical parameters associated with this type of weather system. By utilizing the abundant and diverse sounding data available in AWIPS II NSHARP, several typical cases are analyzed to gain a better understanding of the changing characteristics of the key physical quantities in this type of severe convective weather. The research findings highlight the practical value of the key thermal and dynamic physical parameters, serving as references for diagnostic analysis and nowcasting of severe convective weather events.

Keywords: NSHARP, low-level warm advection-driven type, low-level jet