



The Impacts of Eastward displacement of Convective Systems Over Tibetan Plateau on the Formation of Southwest Vortex

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The impacts of the eastward propagation of convective systems over Tibetan Plateau on the formation of the southwest vortex (SWV) are analyzed and the results show that intense convective activities ($TBB < 210K$) often occur over the plateau in summer because of the “heat source” effect of the Tibetan Plateau. The convective system near the east edge of the plateau is easy to move eastward off the plateau leading by the short-wave trough in the westerly, almost in the direction of $200hPa \sim 500hPa$ averaged wind direction. The divergent center induced by the latent heat release associated with the intense convective activities move out with the convective system, and it contributes to the decompression at lower troposphere which is conducive to the plateau edge cyclogenesis (PEC). Zwack-Okossi (Z-O) equation analysis indicates that the latent heat release is the dominant effect contributed to the SWV formation in this case. Moreover, although the convergence associated with the special terrain characteristics of Sichuan Basin is also conducive to the formation of SWV, it is only of the secondary importance.