

A Study of Summertime Afternoon Convection in Southern Taiwan During 1994

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ABSTRACT

This paper collects dense rain gage data and hourly satellite IR image to analyze the afternoon convective system in the southern Taiwan area during the summer of 1994. The CSU RAMS, a three dimensional nonhydrostatic model, was used to simulate the evolution of the long lived convective system lasted for eight hours that occurred at 5 July, 1994.

The results show that due to the surface heating, the weak east wind can cross the mountain ridge to form a convergence zone with the sea breeze and upslop wind on the western slop of CMR(Central Mountain Range). We believe that the convergence zone is the major mesoscale forcing to trigger the convection. The convective system consists of multiple meso- γ scale convective cells with hourly live period more or less. The convective system was maintained 8 hours on the convergence zone through the mechanism of triggering new cell, merging of two cells and splitting of individual cell. The cold air and low level outflow associated with precipitation were also investigated.

Key words : Afternoon Convection, Upslop Wind, Cross Mountain Flow, Low Level Outflow.