

Structure of a Typhoon Spiral Rainband Observed by Dual-Doppler Radar

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The typhoon Fengshen (0806) landed in Kuiyong village, Shenzhen, Guangdong province at 0530 BST 25 June 2008. It resulted in heavy rainfall in Guangdong province. The 3D wind fields of a spiral rainband were retrieved from dual-Doppler radar data. This spiral rainband was located on the west of the storm center, and it is convective precipitation. It is shown that there were some strong reflectivity areas in the low level of the rainband region. A convergence zone with maximum value of $-15 \times 10^{-4} \text{ s}^{-1}$ exists at the low levels in the rainband. The convergence zone tilts outward from the inner edge of the rainband to the outer edge above 2km level. A couple of mesoscale updraft and downdraft existed in the rainband. The maximum updraft is 4m/s and that of the downdraft is less than -1m/s. The updraft zone was corresponded with the strong reflectivity zone. In the vertical cross section from the storm center, there was inflow in the outer side of the rainband. The strongest inflow existed below 1km level. The inflow entered the rainband at the low levels from the outside rainband. On the other hand, there was outflow in the inner side of the rainband. These flows converged at the low levels of the rainband center region. The tangential component of the wind decreased with height and the maximum wind region was at 3km level.