

A Review on the Recent Typhoon Research

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ABSTRACT

The typhoon research has shifted from the area of the axisymmetric dynamics to the area of the asymmetric dynamics in the last decade. The interactions of the typhoon with the climate system are also getting more attention. This review paper begins with an examination of the Ooyama's classical work on the tropical cyclone axisymmetric dynamics. The Taiwan's typhoon research problems are discussed. Researches related to the typhoon asymmetric dynamics from the author's group are reviewed. The works discussed are (1) a possible mechanism for the eye rotation of typhoon Herb, (2) merging processes of tropical cyclone Zeb and Alex, (3) successive formation of tropical vortices in the Northwest Pacific summer monsoon, (4) topographic effects on barotropic vortex motion, (5) potential vorticity in a moist atmosphere, (6) a rare equatorial tropical cyclone formation of Typhoon Vamei, and (7) the formation of concentric vorticity structure in typhoons.

Key words : Axisymmetric dynamics, Asymmetric dynamics