

Analysis of the Looping Track of Typhoon Muifa with the MM5 Model

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The MM5 numerical prediction model is used to analyze the looping track of Typhoon Muifa. The objective of the analysis is to determine the applicability of the steering method in explaining the unusual behavior of the track. The steering method is based on the idea that tropical cyclones are translated by the large scale winds which surround the cyclones. A preliminary study of the applicability of the method is first done by using the tracks of tropical cyclones in the Northwestern Pacific during the period, 1990 to 1999. The behavior of the tracks is examined with the aid of the climatological flow patterns at the 300mb level. The tracks may be classified generally into three types; east-west tracks, recurving tracks and a looping track. The preliminary study indicates that the occurrence of each type may be explained by the steering flow at 300mb. The preliminary study is followed by a study, which examines the applicability of the steering method in explaining the complicated track of Typhoon Muifa. The study uses the observed track of Typhoon Muifa and the corresponding flow patterns at 300mb. The observed track is based on the