

The Study on the Interaction between Talim Typhoon and Atmospheric River

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The phenomenon of atmospheric rivers can send vapor hundreds or even thousands of kilometers, which in turn can generate large amounts of precipitation in areas affected by the atmosphere. In the past, such phenomena were rare in the west coast of the United States and in East Asia. In our analysis, we found that the typhoon outer circulation in 2012 increased the strength of the southwest airflow and caused a long-distance vapor transmission similar to that of the "atmospheric river", causing heavy rainfall in the southwestern part of Taiwan. The typhoon outer circulation which interacted with the southwest airflow was very obvious.

Through the research, it was found that due to the existence of the dual typhoon vortexes which attracted each other, the merger phenomenon caused by the typhoon movement between "Tailm" and "Guchol", the mechanism of vapor transmission over long distances can make the atmospheric river originating from the South China Sea. In addition, we used the WRF mode to simulate the dynamic and thermal processes that affected the interaction between energy and vapor transport during the development of Tyler and Guchol typhoon with southwest airflow have a good performance.

Keywords: Atmospheric River, Tailm Typhoon, Guchol Typhoon, Southwest Airflow

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