

Factors that Caused a Distant Rain Event in Taiwan Associated with Typhoon Nalgae (2011)

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Abstract

Typhoon Nalgae (2011) formed in late September 2011 over the Northwest Pacific and translated westward across the northern Philippines in early October. The closest distance of its center from the southern tip of Taiwan was more than 500 km. Satellite images indicated that rainbands associated with the main typhoon circulation did not even touch the Taiwan Island. However, mesoscale convective systems (MCS) continued to form over the ocean off the eastern coast of Taiwan, far away from the typhoon center. The MCSs moved over land and produced heavy rainfall in most part of eastern Taiwan, especially in Yilan County of the northeastern Taiwan. This distant rain event (DRE) is studied in detail using WRF simulations in order to understand the factors that caused the heavy rainfall.