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Effects of Orography on the Genesis of Hurricane Javier (2004) in the Eastern Pacific Ocean VAN NGUYEN, YUH-LANG LIN, N.C. A&T State University — Observational evidence shows that the Eastern Pacific Ocean is the most active region of tropical cyclone genesis in the world. In this study, we will perform numerical experiments using the Weather Forecast and Research (WRF) model to investigate the orographic effects on the genesis of Hurricane Javier (2004). In particular, we test the hypothesis that the formation of Hurricane Javier is due to the merging of the orographically modified African easterly waves by Central American mountains, mesoscale convective systems (MCSs) embedded within the AEWs, and the MCSs induced by diurnal heating over the mountains. Effects of orography and moisture are studied by performing sensitivity experiments using WRF with the mountains removed and moisture reduced, respectively. Fundamental understanding of the tropical cyclogenesis over the eastern Pacific is obtained by comparing the results from the control experiment, sensitivity experiments, and available data. This work is supported by a grant from the National Oceanic and Atmospheric Administration, Educational Partnership Program under the cooperative agreement NA06OAR4810187.

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