

Abstract Submitted  
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**Effects of Southern Appalachian Mountains on the Rainfall Associated with the Passage of Hurricane Ivan (2004)** ALAN COVELL, YUHLANG LIN, N. C. A&T State University — Effects of Appalachian Mountains on Hurricane Ivan (2004) are investigated using the Weather Research and Forecast (WRF) model. A single domain with 12 km resolution is used to simulate the storm from 0000UTC 16 to 1200UTC 18 September with a time interval of 3 h. The Appalachian Mountains have a much more profound effect at 1000mb than at 300mb, as revealed in vorticity fields. The simulated fields compare well with satellite imagery, however, the simulated track is slightly west of the actual track. The simulated rainfall indicates that most of the precipitation appears to be focused over the Appalachian mountains and far western N.C., as shown in the observed data, which is also known as rain-shadow phenomenon. The storm weakens as it passes over and around the mountains. The Appalachian mountains appear to have a focusing effect on getting the precipitation concentrated around the mountains. The mountains also seem to influence the path of the storm, causing it to move farther westward as it heads north. 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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