

Abstract Submitted
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A study of ocean spray lubrication effect on tropical cyclone intensity YEVGENII RASTIGEJEV, YUH-LANG LIN, N. C. A&T State University — It has been shown recently (*Barenblatt, et al., 2005*) that the presence of water droplets in the vortex of tropical cyclone (TC) leads to a significant reduction in turbulent intensity and consequently to a sharp flow acceleration. The developed theory has been extended by considering different mechanisms of ocean spray production, positive feedback of wind acceleration, different turbulence closure models and some other contributing factors. The sensitivity of ocean spray lubrication effect to the theoretical model has been investigated. A series of numerical experiments with an ideal hurricane model have been performed. The simulations have been run with and without spray for different theoretical models. An effort to develop a proper spray parameterization based on the theoretical consideration and the results of numerical experiments is undertaken. Consequently we will incorporate the spray parameterization in the realistic Weather Research and Forecast (WRF) numerical model in order to improve the accuracy of TC intensity prediction. 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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