Abstract Submitted
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Lagrangian coherent structures in hurricanes DOUG LIPINSKI, KAMRAN MOHSENI, University of Florida — We present the results of a "surface tracking" algorithm for efficiently computing Lagrangian coherent structure (LCS) surfaces in three dimensions. The algorithm is applied to data from a Weather Research and Forecasting simulation of hurricane Rita. The highly complicated LCS surfaces reveal complex dynamics and transport in the hurricane, particularly in the lower atmosphere boundary layer and the upper level outflow. The lower level transport in the hurricane is of particular importance for accurate intensity prediction in hurricane forecasts due to the uncertainty in the ocean-atmosphere interaction. Understanding the lower level transport and mixing behavior in hurricanes could lead to significant advances in hurricane intensity prediction.

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