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Lagrangian coherent structures and transport in hurricanes
DOUG LIPINSKI, KAMRAN MOHSENI, University of Colorado - Boulder — Hurricane intensity forecasting remains one of the most difficult challenges in weather research. At present, there is a lack of understanding with regards to the appropriate oceanic boundary conditions for the hurricane and the corresponding energy and moisture transport. In this talk, the Lagrangian coherent structures (LCS) present in a numerical simulation of hurricane Rita (2005) are identified. The LCS reveal the low level atmospheric transport in this hurricane and provide insight into the conditions which may strengthen or weaken the hurricane. This information may be used to better focus future research efforts in this area by illuminating the key mechanisms for transport in the low level atmosphere of a hurricane.

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