MATURE STAGE EXPERIMENT
Science Goals & Observational Applications

Environment Interaction (TC in Shear) Experiment: Paul Reasor (PI), Xiaomin Chen, Jason Dunion, John Kaplan, Rob Rogers, Jon Zawislak, Jun Zhang, Michael Riemer (Johannes Gutenberg-Universität)

Goal: Collect observations targeted at better understanding the response of mature hurricanes to changes in vertical wind shear, the variation in speed and direction with height of the winds surrounding a storm [*IFEX Goals 1, 3*]. See the 2019 HRD HFP web page for additional details: http://www.aoml.noaa.gov/hrd/HFP2019/index.html

Observational Applications: It is presently unclear whether the physical parameterizations (e.g., microphysical and boundary layer) in hurricane forecast models properly represent the pathways for shear-induced intensity change. The targeting of boundary layer thermodynamic structure in particular would provide a unique data set for model evaluation as the TC transitions from axially symmetric structure to a shear-disrupted asymmetric structure. Additionally, the thorough sampling of near-core thermodynamic and kinematic structure of the storm environment should provide better initialization of the flow most closely responsible for interacting with the TC to produce structure and intensity change.