2019 NOAA/AOML/HRD Hurricane Field Program - IFEX

MATURE STAGE EXPERIMENT
Science Goals & Observational Applications

Eye-Eyewall Mixing Module: Aberson (PI)

Goal: Eyewall miso- and meso-scale vortices are ubiquitous in very intense (category-4 and category-5) tropical cyclones. However, we have never fully sampled their kinematic nor thermodynamic structures, nor do we know the importance of these features on intensity changes within tropical cyclones, if any. The goal of this experiment is to gain greater understanding of the structure of these features and their ultimate impact on intensity changes [*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: The observational data obtained will be transmitted in real-time for incorporation in operational analyses of intensity as they will provide high-resolution measurements of near-surface winds independent of the SFMR. The data will be analyzed to gain understanding of the three-dimensional kinematic and thermodynamic structures of these features. Large eddy simulations of other high-resolution numerical models will be verified to see if similar structures are produced. The data will also be assimilated into very high-resolution numerical models to test their impact on forecasts.