2019 NOAA/AOML/HRD Hurricane Field Program - IFEX

MATURE STAGE EXPERIMENT
Science Goals & Observational Applications

Secondary Eyewall Formation Module: Rob Rogers (PI), Hui Christophersen, Michael Fischer, Anthony Didlake (PSU)

Goal:
The goal of this module is to sample the TC inner core convection and environment when secondary eyewall formation (SEF) appears likely to occur or has already occurred within the storm. The module will provide critical observations for improving the understanding of the dynamic and physical processes of SEFs and eyewall replacement cycles, which have impacts on storm intensity and structure [*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 data collected during this module will be useful for the evaluation of numerical model performance during secondary eyewall formation [*IFEX Goal 1*]. Radar measurements of reflectivity and vertical velocity, along with flight-level measurements of vertical velocity, can be used for the evaluation of microphysical parameterizations. Dropsonde measurements of low-level kinematic and thermodynamic structures and SFMR measurements of surface wind speed can be used to evaluate the performance of planetary boundary layer parameterizations. Select datasets can be withheld in observing system experiments (OSEs) to assess the impact of them on modeling accurately the TC structure and evolution.