

2019 NOAA/AOML/HRD Hurricane Field Program - IFEX

SYNOPTIC FLOW EXPERIMENT *Science Goals & Observational Applications*

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Goal: Investigate new sampling strategies for optimizing the use of aircraft observations to improve model forecasts of tropical cyclone track, intensity, and structure [*IFEX Goal 1*]. See the 2019 HRD HFP web page for additional details:

<http://www.aoml.noaa.gov/hrd/HFP2019/index.html>

Observational Applications: NHC's Synoptic Surveillance missions were flown from 1998 until 2006 in collaboration with HRD's hurricane field program; it was transitioned to operations at NOAA's National Hurricane Center and Aircraft Operations Center in 2007. Since that time, definition of flight tracks has relied on the same targeting techniques developed over a decade ago. The new Synoptic Flow Experiment will target the collection of GPS dropsondes and tail Doppler radar (TDR) data using more advanced ensemble-based targeting techniques that optimize aircraft sampling of the TC environment. These targeted observations will be used to evaluate the impact of new adaptive sampling strategies on the operational coupled model forecast system's forecasts of TC track, intensity, and structure. GPS dropsonde observations will be quality controlled and transmitted to the GTS in real-time for assimilation in to numerical models and TDR data will be transmitted to NOAA EMC in real-time.