2019 NOAA/AOML/HRD Hurricane Field Program - IFEX

GENESIS STAGE EXPERIMENT
Flight Pattern Descriptions

Experiment/Module: Precipitation Mode (PMODE) Experiment

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Requirements: Pre-genesis disturbances (pre-TDs), including NHC-designated "Invests"

Genesis Stage Science Objective(s) Addressed:

1) To investigate the precipitation modes that are prevalent during the genesis stage and the response of the vortex to that precipitation organization [*IFEX Goal 3*]

P-3 Pattern 1:

What to Target: Sample the mesoscale convective burst area and/or mid-level circulation of a pre-TD or "Invest"

When to Target: Every 12 h, preferably in coordination with a corresponding G-IV mission flying the surrounding environment (for other Genesis Stage objectives)

Pattern: Standard Single (repeated), or Rotated Figure-4

Flight altitude: 10–12 kft

Leg length or radii: 105 n mi/195 km (can be adjusted for the size of the precipitating area)

Estimated in-pattern flight duration: ~ 5 h [for repeated Single-4, or Rotated Fig. 4]

Expendable distribution: Standard dropsonde locations

Instrumentation Notes: Use straight flight legs as safety permits. Inbound-outbound passes should be uninterrupted. DWL should be downward looking, 20° off nadir.

G-IV Pattern 1:

What to Target: Sample the mesoscale convective burst area and/or mid-level circulation of a pre-TD or "Invest"

When to Target: Every 12 h, when P-3 not available and G-IV not fulfilling other Genesis Stage objectives

Pattern: Standard Single Figure-4 (repeated), or Rotated Figure-4

Flight altitude: 40–45 kft

Leg length or radii: 105 n mi/195 km (can be adjusted for the size of the precipitating area)

Estimated in-pattern flight duration: ~ 5 h [for repeated, Single-4, or Rotated Fig. 4]

Expendable distribution: Standard dropsonde locations

Instrumentation Notes: None