

Date: 11/17/11
Location: ACRC
Aircraft: GPS FASER
Pilot: Arion Mangio
Flights: 2 GPS FASER

Weather

Sunny, light westerly winds, temps around 25F.
METAR KANE 171855Z 26008KT 10SM SKC M02/M12 A3011=

We took GPS FASER to ACRC to gather carrier phase GPS data from the onboard receivers and a ground receiver, and to test two nav filters. We completed 2 flights. Winds were a direct crosswind. The new nav filters were running, but the old AHRS filter was used to provide attitude estimates and feed the control law. Note the saved IMU data DOES NOT have any biases subtracted.

The controller used for all flights was the student controller.

Software used was [trunk/Software/FlightCode rev 696](#)

GPS FASER Flight 01: student controller, standard roll/pitch doublets.
(guidance/doublet_phi_theta.c) 15 state EKF nav filter running in background.

GPS FASER Flight 02: student controller, standard roll/pitch doublets.
(guidance/doublet_phi_theta.c) 21 state EKF nav filter running in background.

Issues

1. We attempted to fly Thor as well, but noted anomalous behavior (jitter) on the flap servos, and scrubbed the flight.

Flight Data Analysis

- 15 state filter appears to be performing well, and matches reasonable close to the micronav AHRS filter. The 21 state filter did very poorly.

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