

VIREO / Day13 / Flight26

TEST: Closed-loop control law validation. Tuning balance energy weight in fault-tolerant TECS.

RESULT: Good flight for control law validation.

EVENTS:

1. This was a elevator-hold flight, i.e. in the bravo mode, the elevator was fixed at -5 deg TE up. The throttle tracked the weighted total energy and the ailerons tracked the roll angle.
2. We tuned the TE component that defines gains for the total energy to throttle loop.
3. We performed step commands in altitude to see how well the TE tracker performed.
4. We did not have time for an aborted autoland, so we did a manual landing.
5. Overall, this was a good flight. We did ALT steps for six different combinations of TE.Kp and TE.wt. The flight data allowed us to choose the gain set that yields the most desirable tracking performance.