

Assignment No 6

(Hand-in by 14/1/25)

Repeat Assignment #4 but use the LQR method to design the gains.

All the design requirements of Assignment #4 apply here.

- a. Choose the gain matrix using the LQR method, such that the convergence criteria are satisfied, subject to the thrust limit.
- b. Calculate the total ΔV .

Provide the following plots:

- i. Relative trajectory (x-y-z).
- ii. x, y and z vs. time.
- iii. Thrust acceleration components vs. time.

On each plot, also add the results of Assignments 3 and 4 (cross product controller and linear feedback controller based on pole placement).