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Gagandeep Thapar; AERO 560 HW3

Problem 1

Orbital Parameters Calculated:

Radius of Orbit [km]: 7078.000

Velocity of SC [km/s]: 7.504

Orbital Period [min]: 98.770

Using the Atmospheric Model from MSISE-90 Atmosphere Model...

Assuming Cd [~]: 2.2

Density @ 700 km [kg/m³]: 3.580e-14

Drag Force [N]: 6.653e-7

Drag Calcs:

Drag Momentum across Orbit Period [mNms]: 3.943

Market RWs:

To overcome 3.94 mNms, the Blue Canyon RWP015 is sufficient with 15.00 mNms.

It will need to be destaturated after 3.80 orbits.

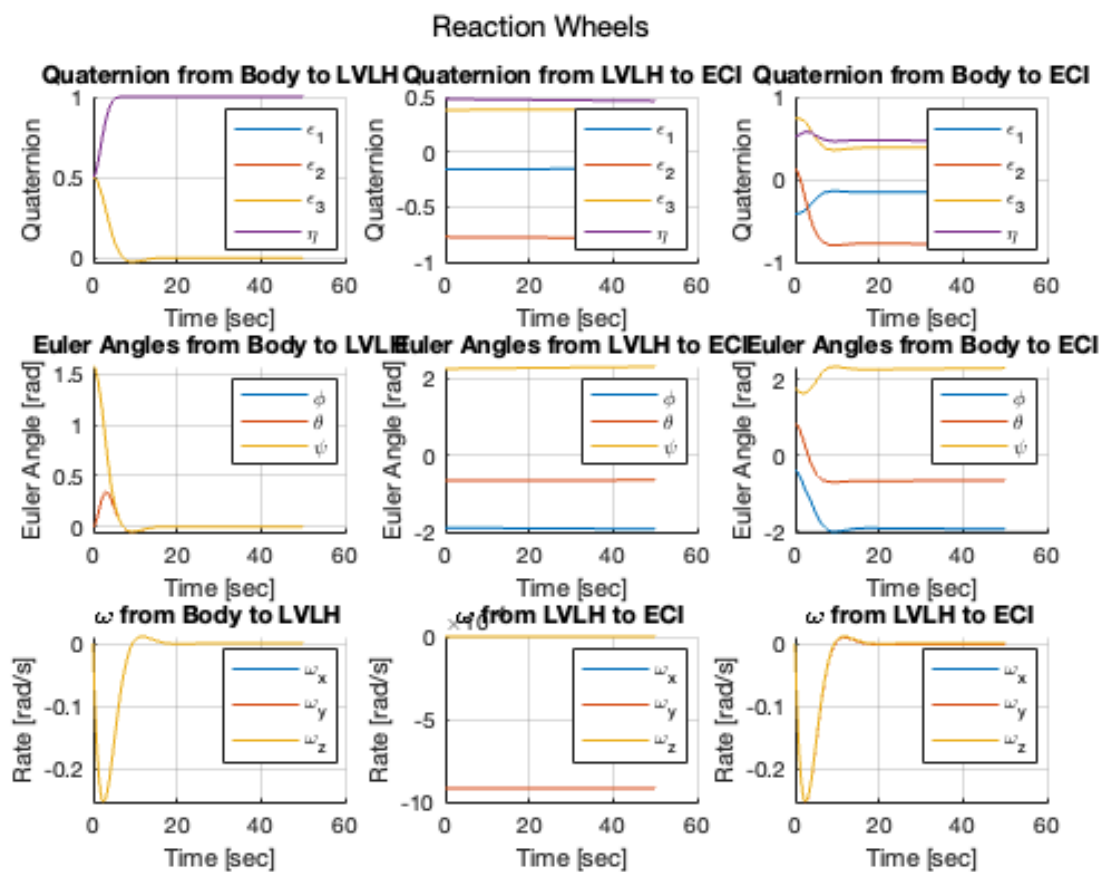
Problem 2

run sim

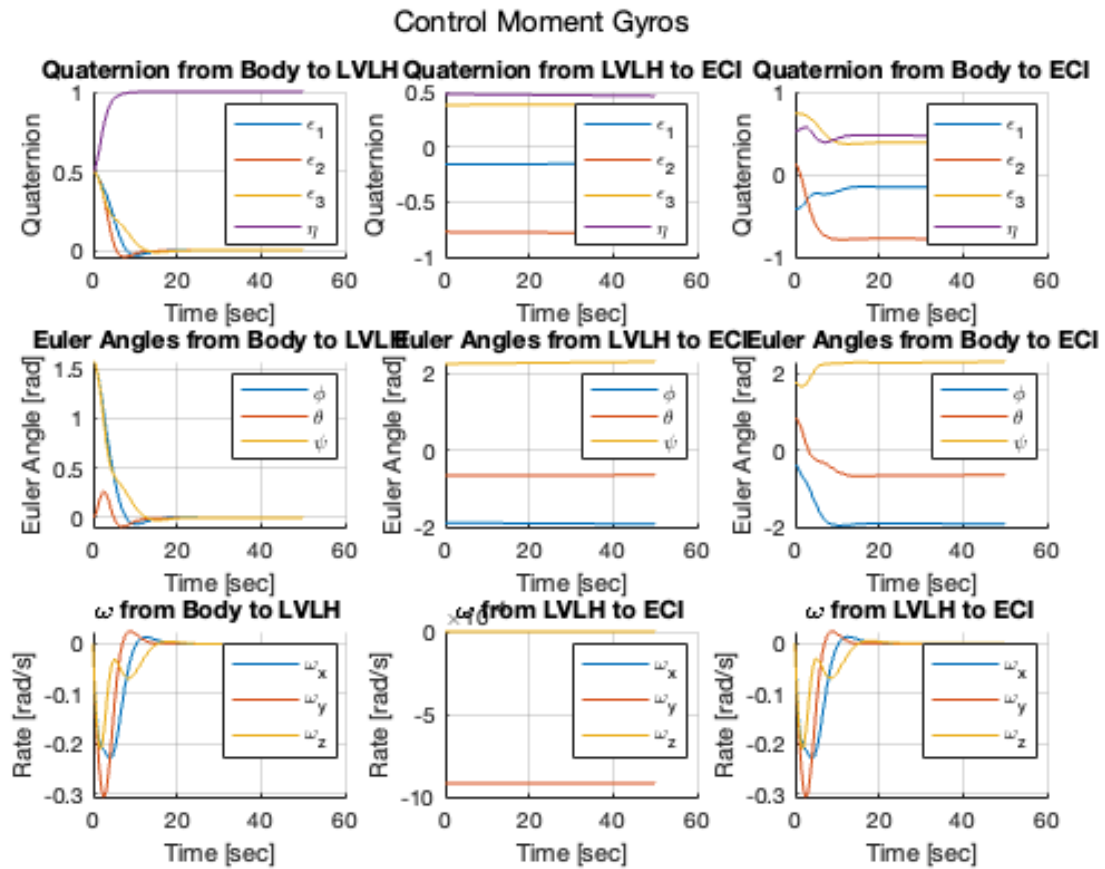
unpack data: A

unpack data: B

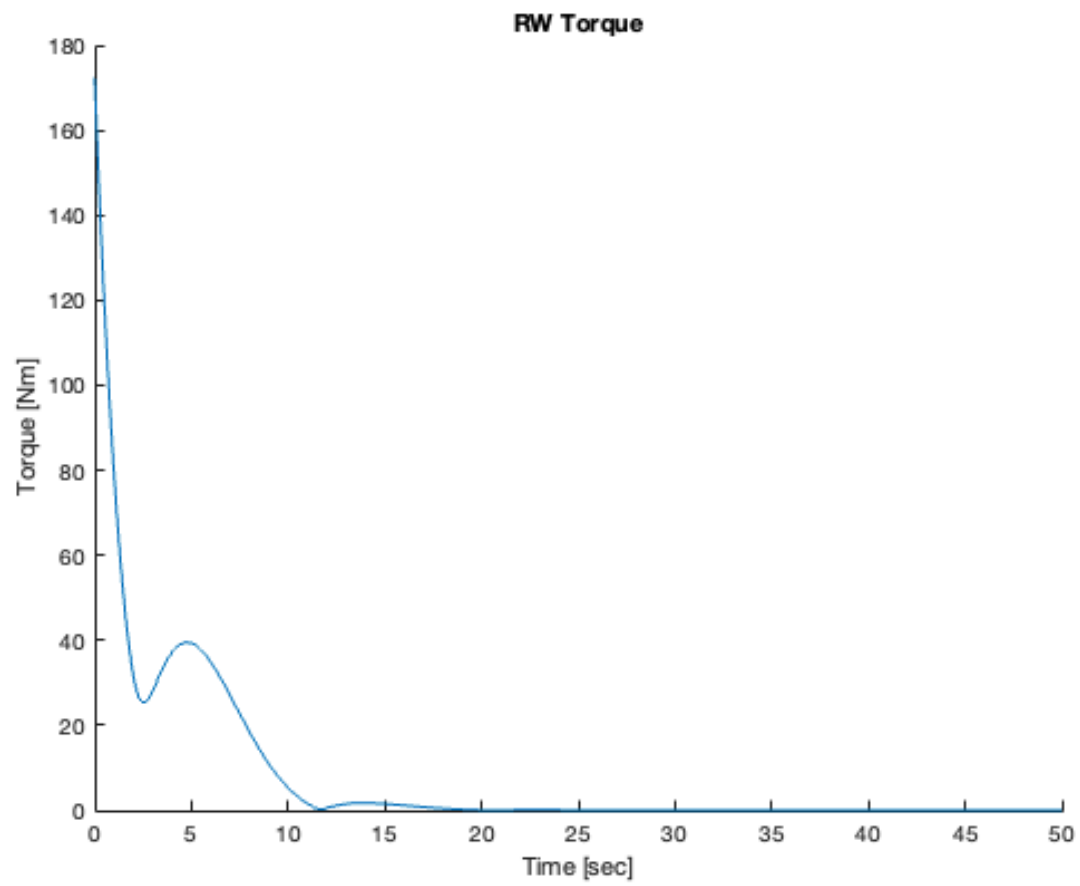
plot data: A

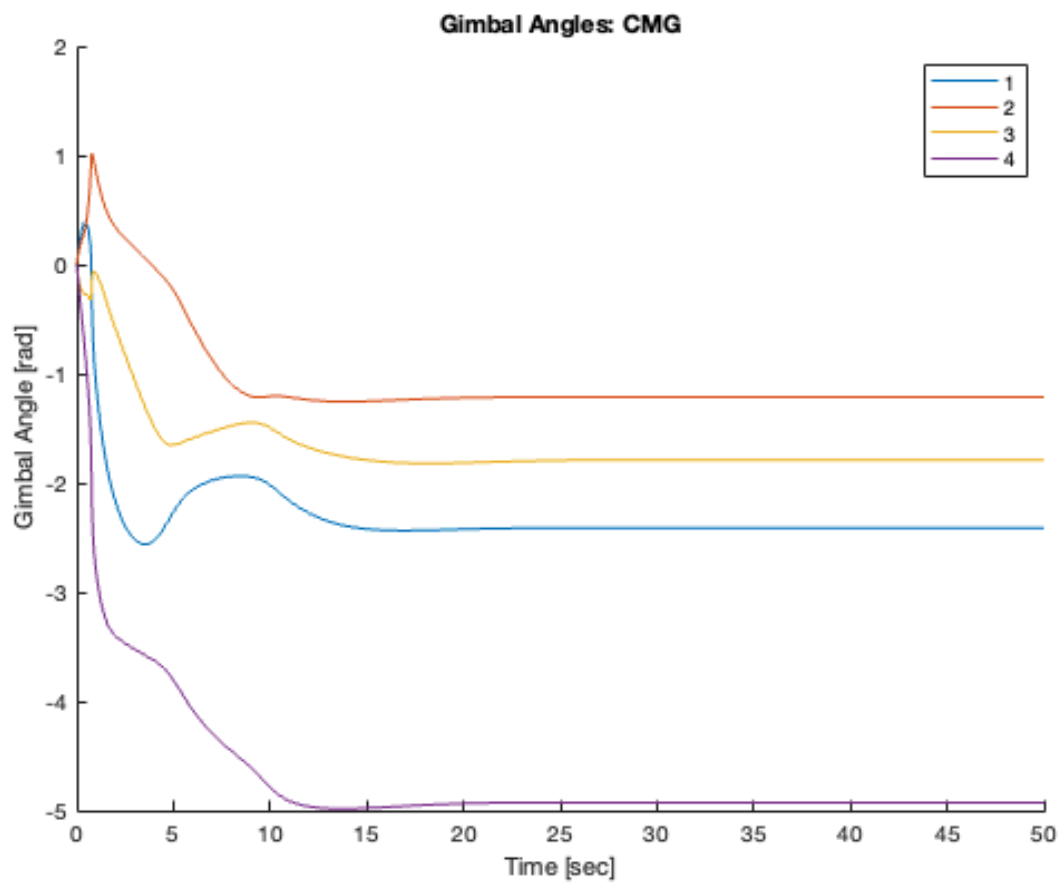


plot data: B



plot misc





Published with MATLAB® R2022b