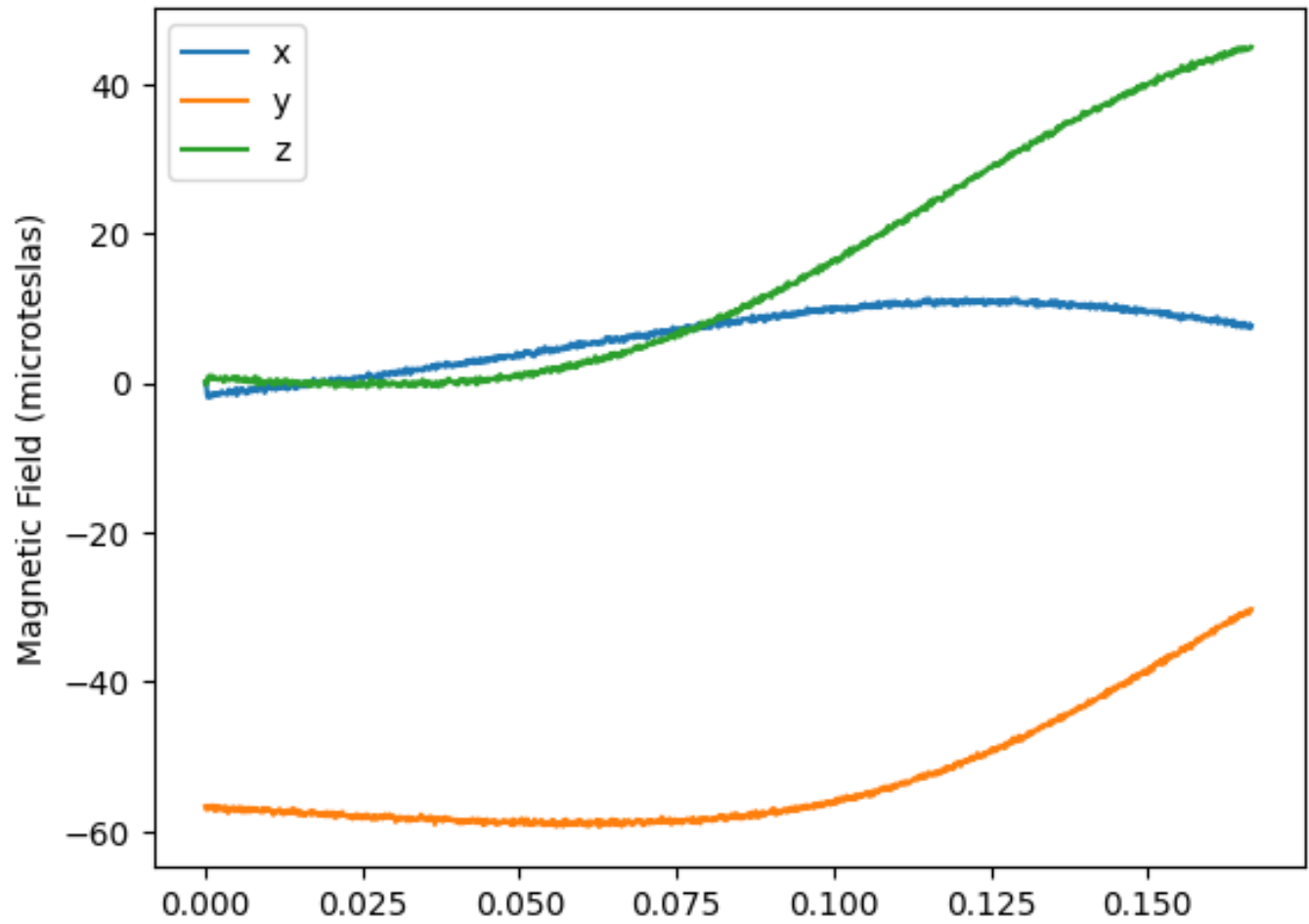
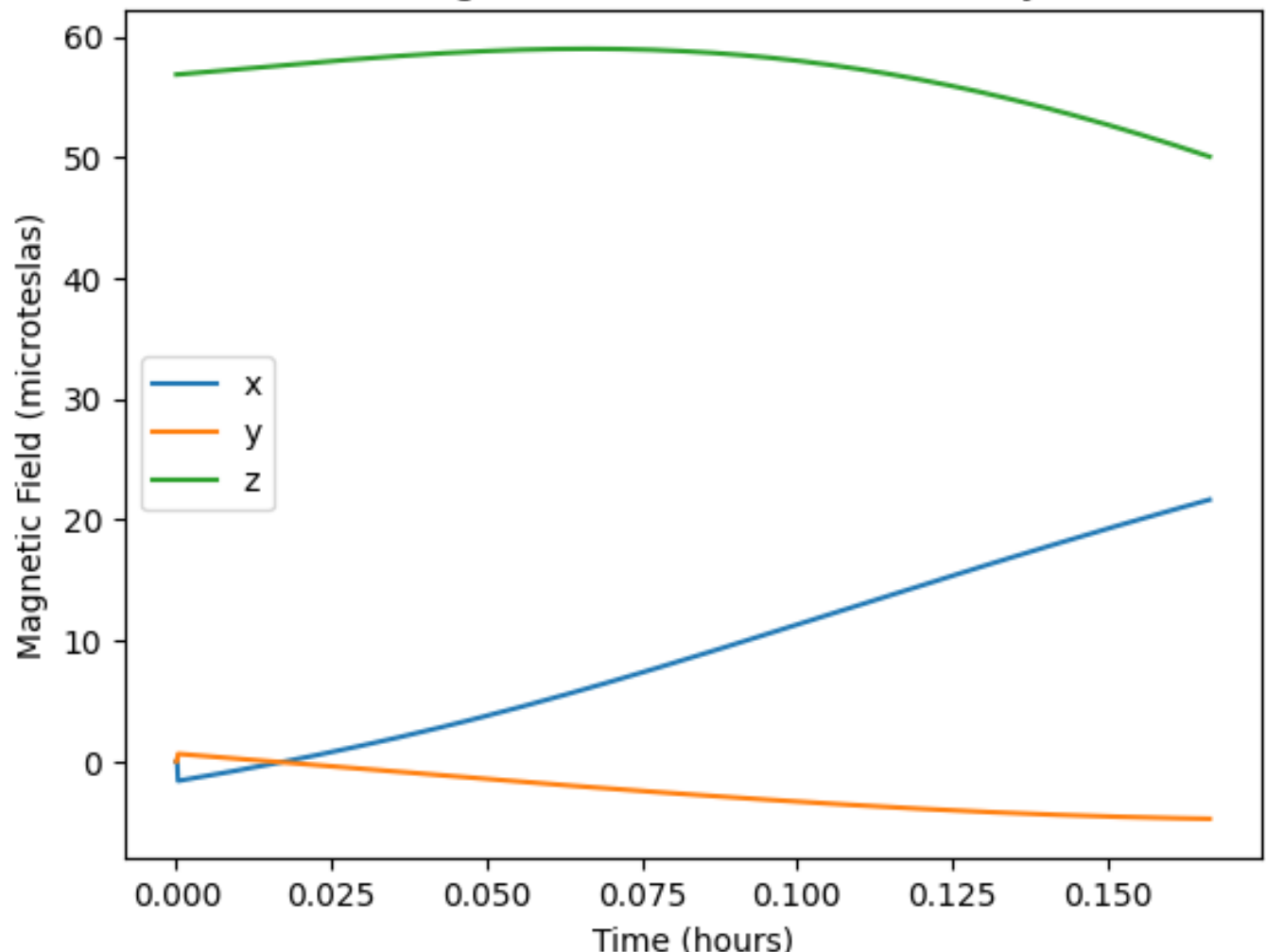


Detumbling Simulation Report

Magnetometer Data (Body Frame)

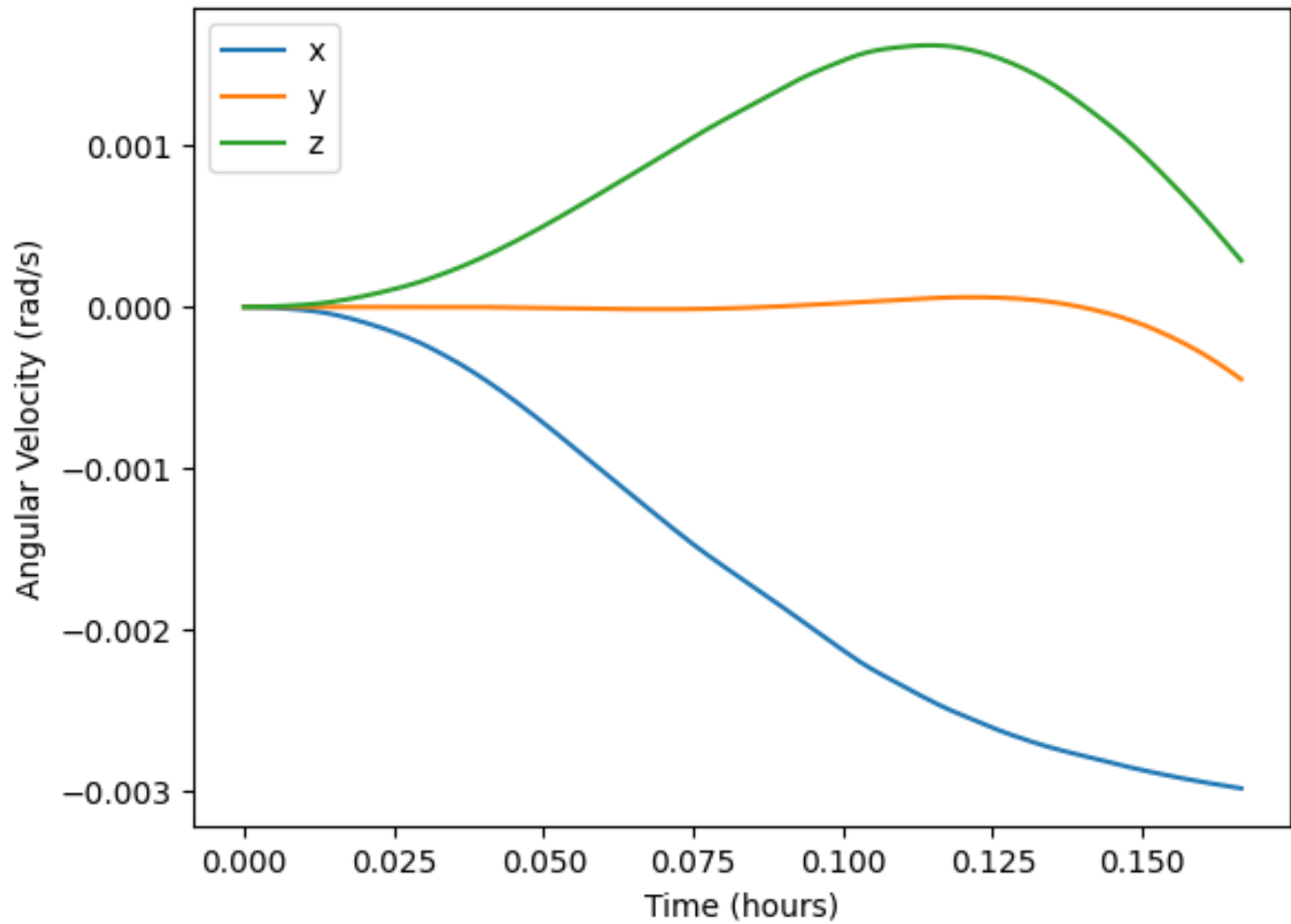
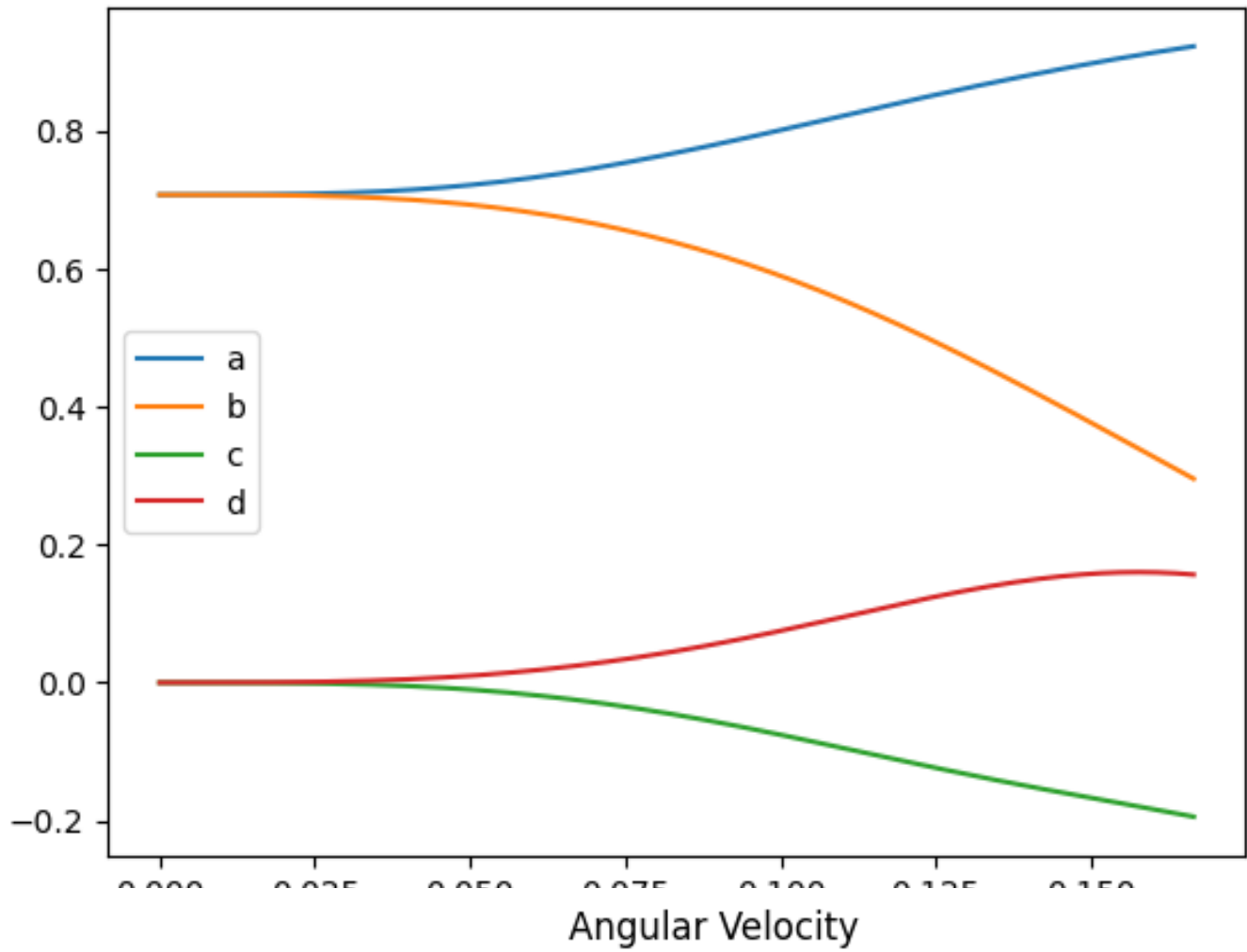


Earth's Magnetic Field (ECI frame from PySOL)

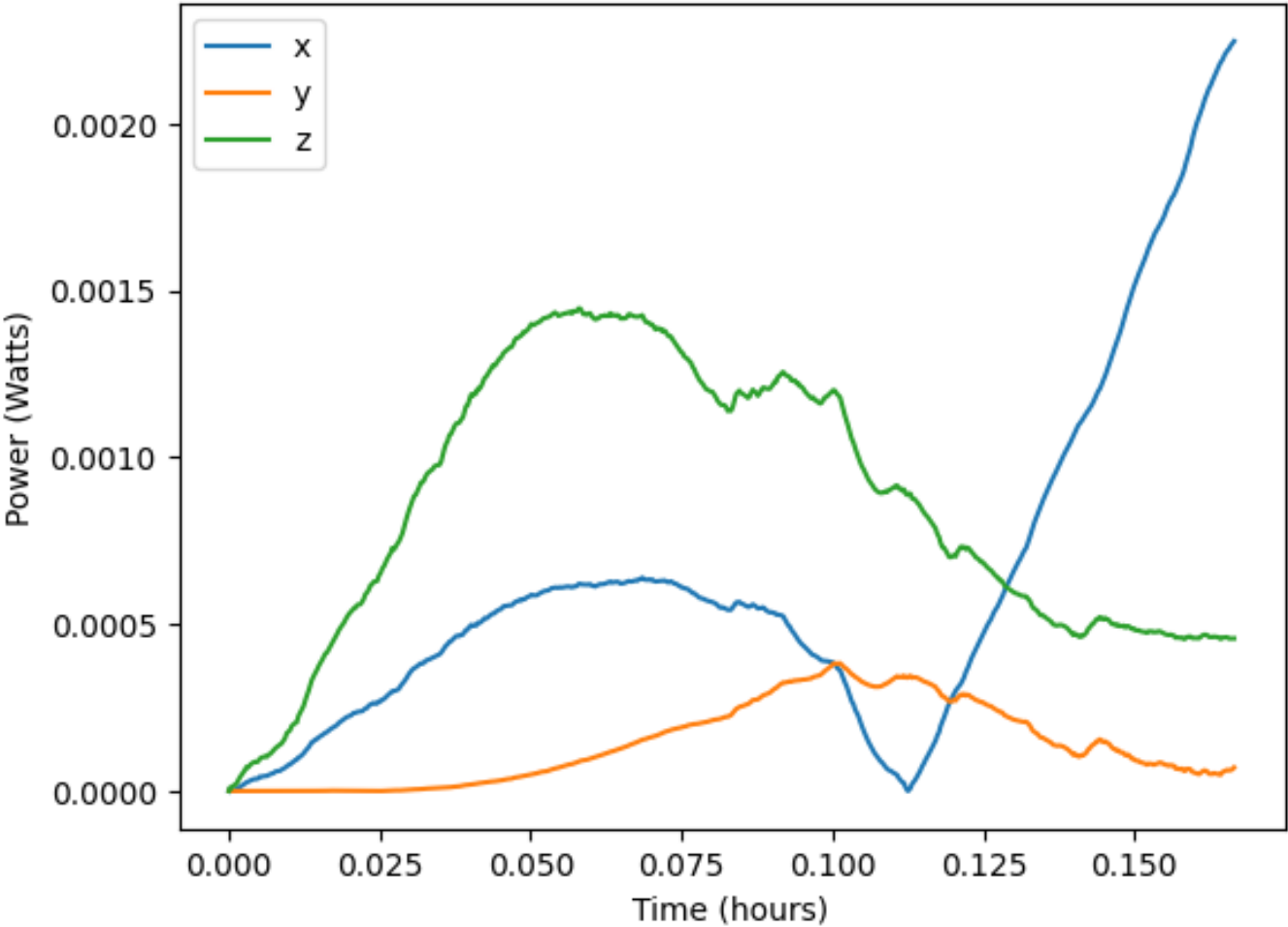
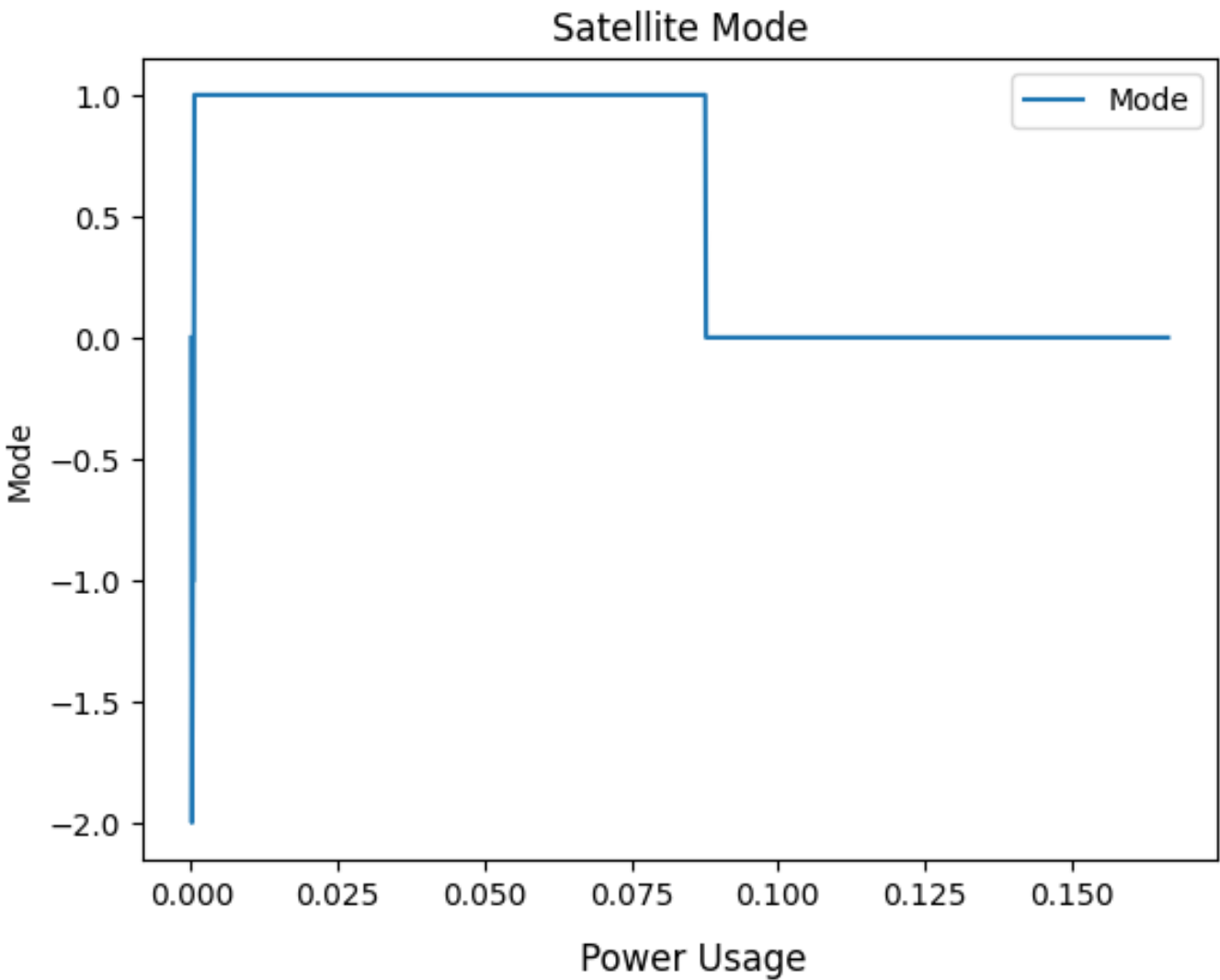


Orientation and Angular Velocity

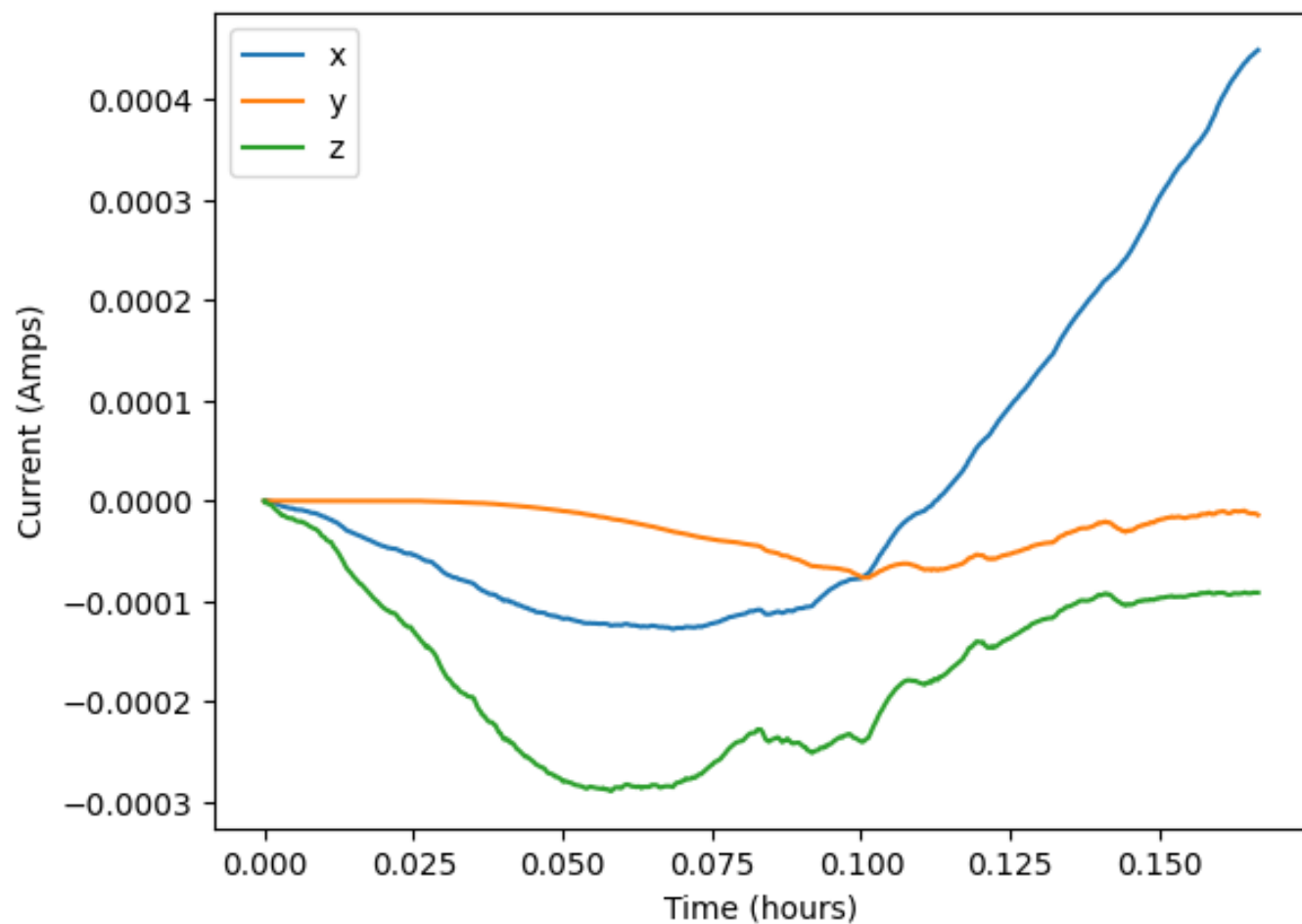
Quaternion



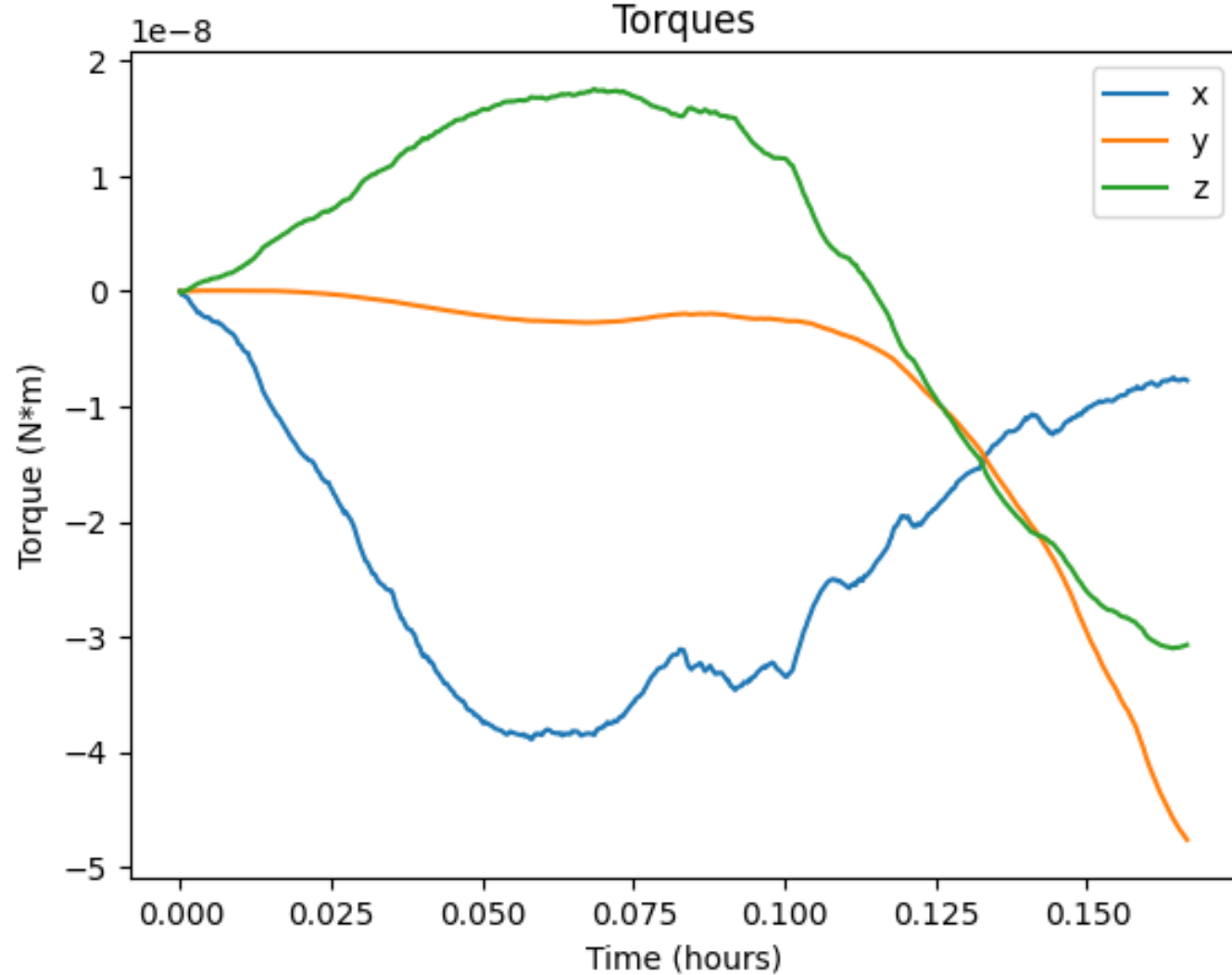
'detumble' = -2, 'search' = -1, 'point' = [0, 1] (based on which cam we're trusting. 1 = cam1, 0 = cam2)



Currents



Torques



Voltages

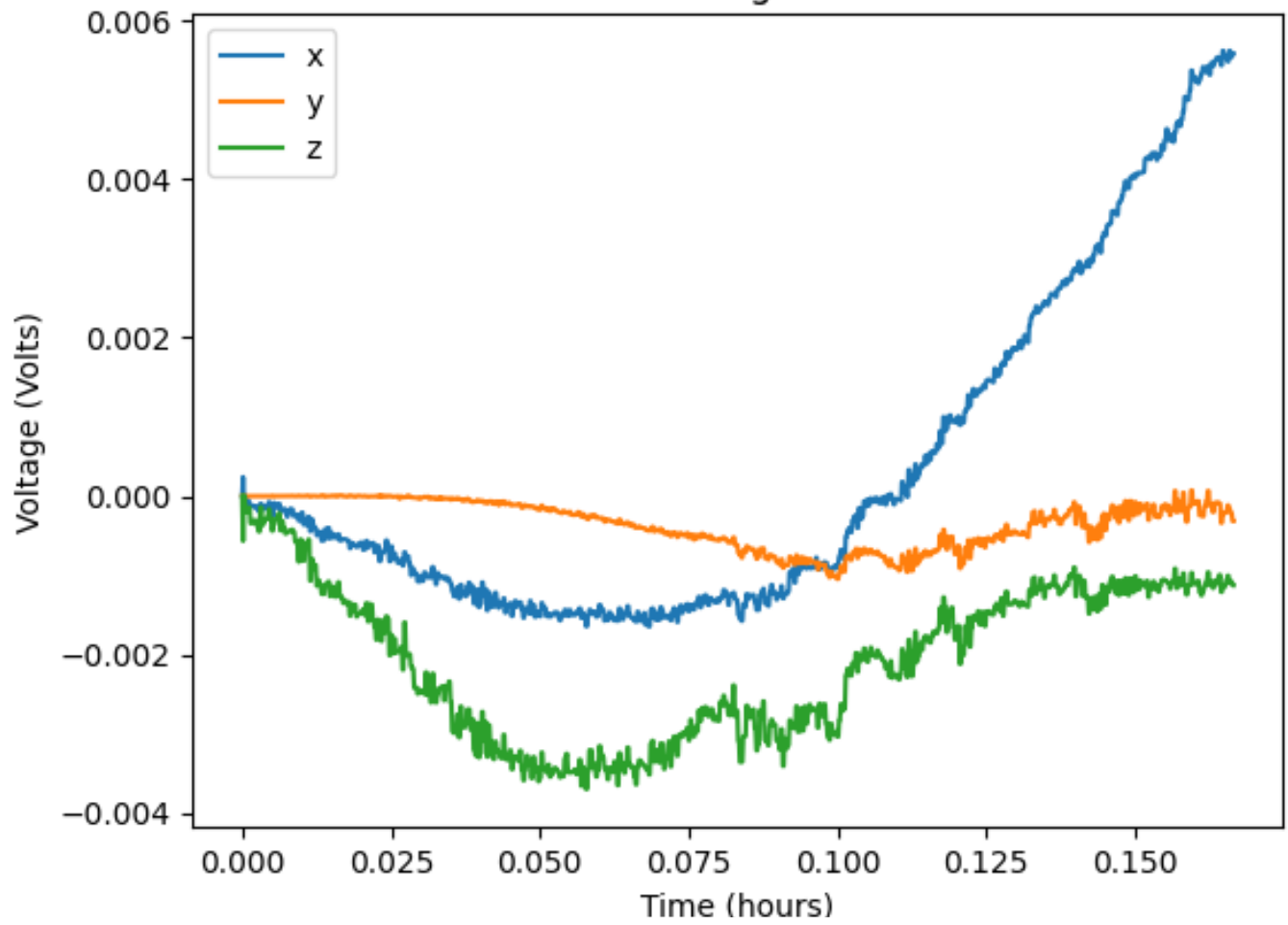
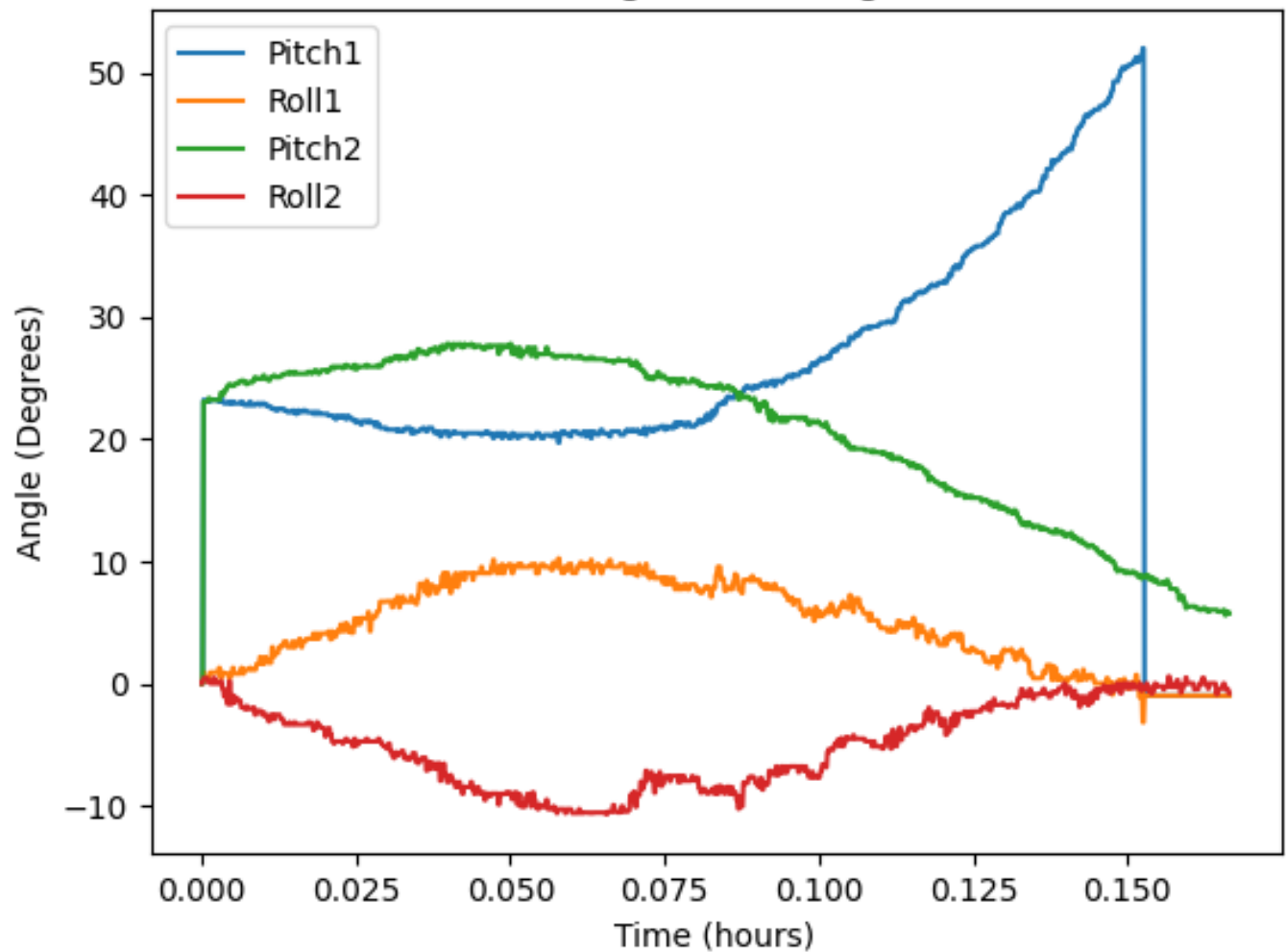
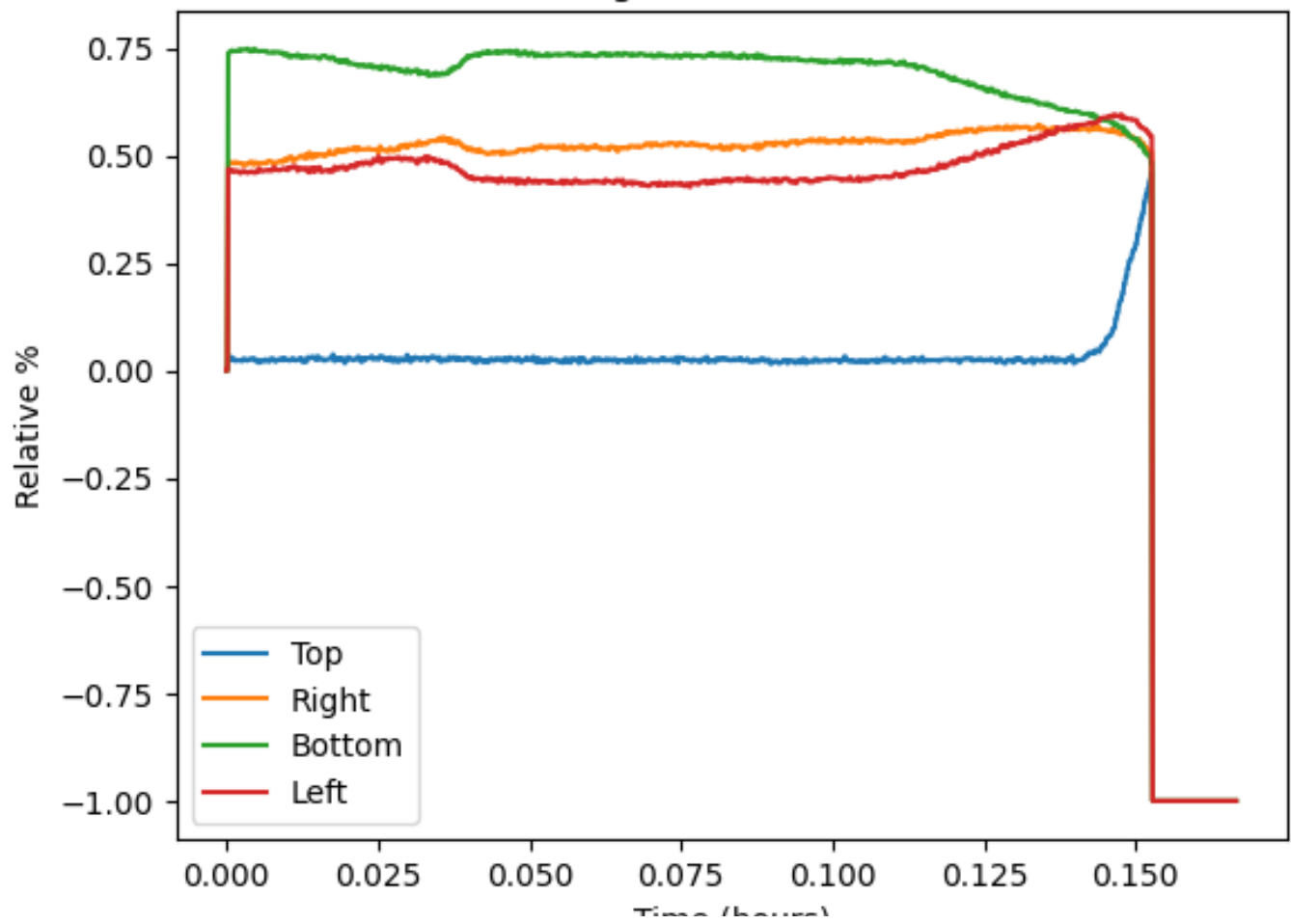


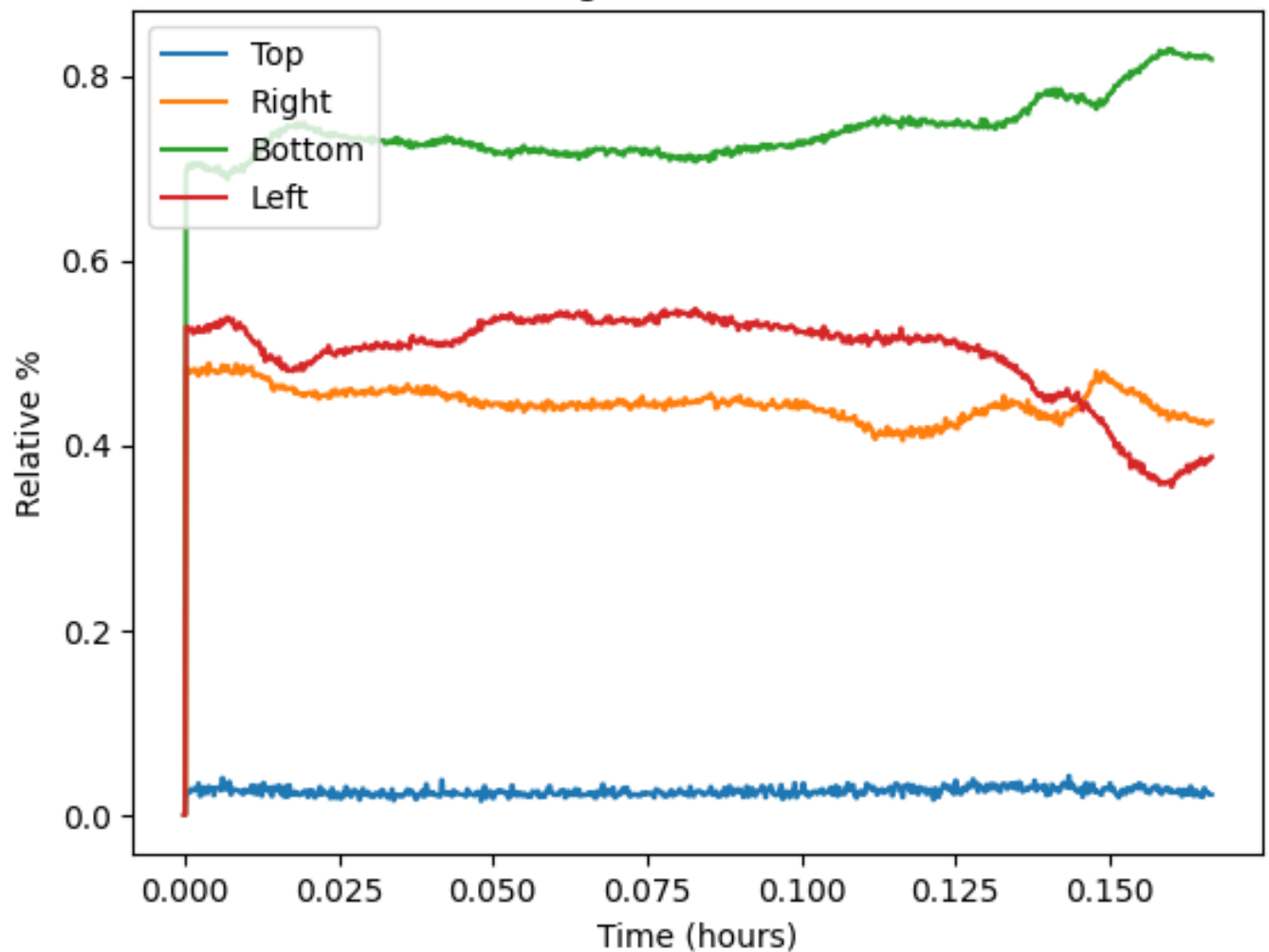
Image Processing



Edge Intensities 1



Edge Intensities 2



General Info

Starting speed: [0 0 0] degrees/s.

Total simulation time: 0.1667 hours

Orbits completed during simulation: 0.1069 orbits.

Hours to detumble: 0.0003 hours.

Orbits to detumble: 0.0002 orbits.

Power consumed to detumble (Total Energy): 0 Jules

Orbital elements: [90, 6828, 9.22e-05, 90, 90, 0]

These define our simulated orbit (see sol_sim.py in PySOL for more info)

B-dot proportional gain: $k = 1e-05$

Bang-Bang proportional gain: $k_p = 150.0$

Bang-Bang derivative gain: $k_d = 130.0$

Satellite info:

Ferro Magnetorquer:

Number of turns = 1845

Area = $3.216990877275948e-05 \text{ m}^2$

$k = 1e-05$

Magnetizing factor = 38.3370626305719

Ferro Magnetorquer:

Number of turns = 1845

Area = $3.216990877275948e-05 \text{ m}^2$

$k = 1e-05$

Magnetizing factor = 38.3370626305719

Ferro Magnetorquer:

Number of turns = 1845

Area = $3.216990877275948e-05 \text{ m}^2$

$k = 1e-05$

Magnetizing factor = 38.3370626305719