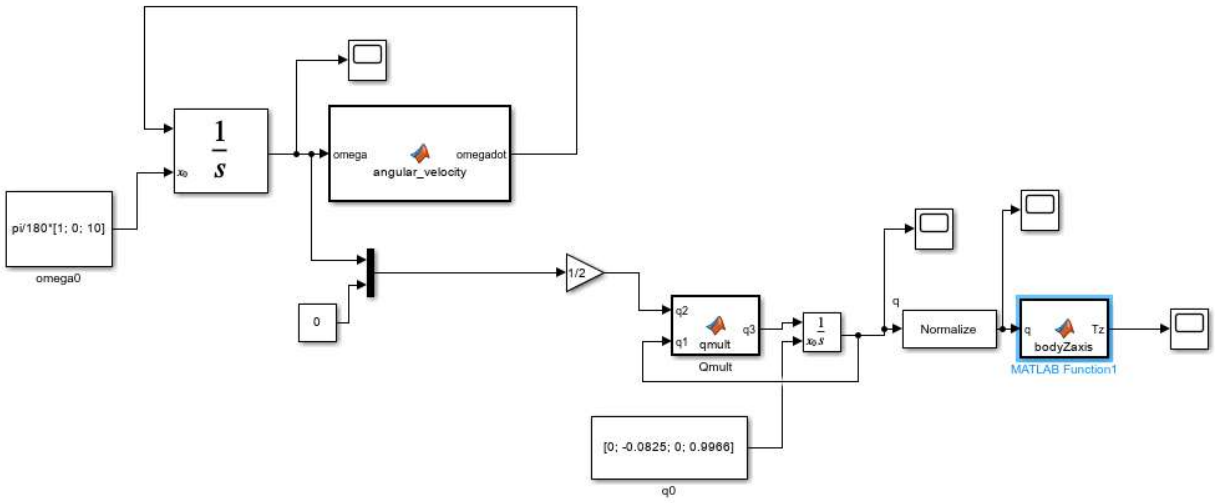
Izaac Facundo

Imf339

HW5

Problem 3




```
function omegadot = angular_velocity(omega)

J = [100 0 0; 0 100 0; 0 0 60];

omegadot = -inv(J)*(cross(omega,J*omega));
```

```
function q3 = qmult(q2,q1)

q3 = [q2(4).*q1(1:3) + q1(4).*q2(1:3) - cross(q2(1:3),q1(1:3));
    q2(4)*q1(4) - dot(q2(1:3),q1(1:3))];
```

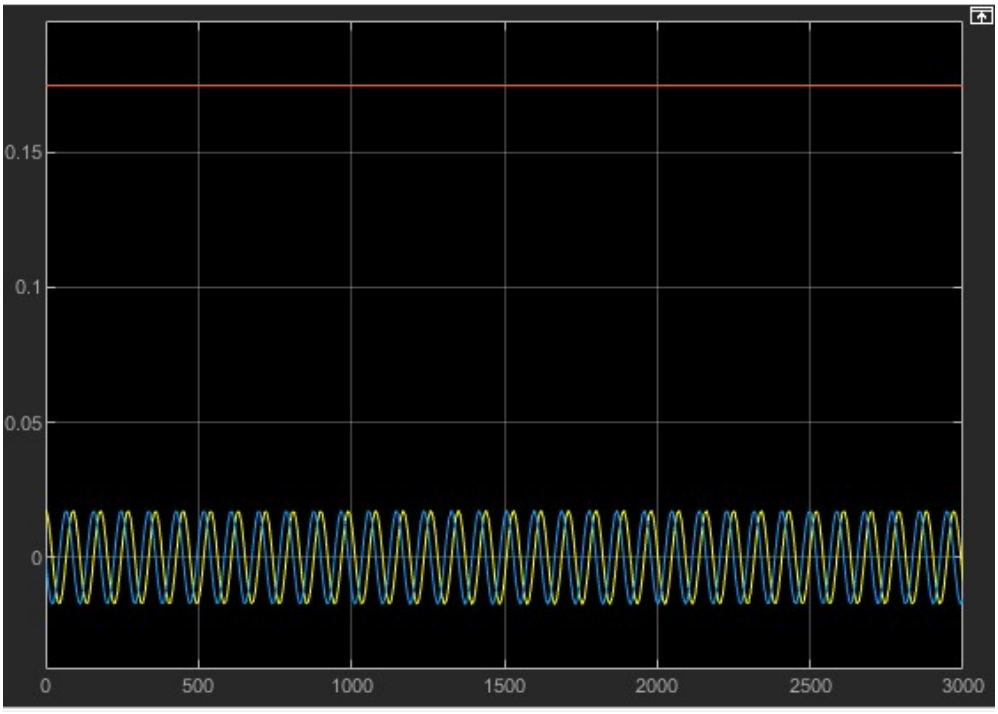
```
function Tz = bodyZaxis(q)
I = eye(3);
qs = q(4);

qvx = [0 -q(3) q(2); q(3) 0 -q(1); -q(2) q(1) 0];

T = I - 2*qs.*qvx + 2*qvx*qvx;

Tz = T(3,:);
```

ANGULAR VELOCITY OVER TIME



BODY Z AXIS OVER TIME