

AE3521

Spring 2004 Homework #10

Due: Monday April 5, 2004 at 9:30am (beginning of class) or before

1. Wiesel chapter 5, problem 3, pp. 162.
2. Wiesel chapter 5, problem 4, pp. 162-163.
3. For a rate gyro with an inertia about the gimbal axis of  $I_g$  and a rotor angular momentum with a magnitude of  $H$ , pick the gimbal spring and damping coefficients so that the rate gyro response to a step input of angular velocity has a damping ratio of one, and deflects  $W$  radians for an input of one radian per second.
4. Wiesel chapter 6, problem 1, p. 190.