

Due Monday April 5

- 1) In class we derived an approximate expression for motion of a rigid body with no torque and $I_1 < I_2 < I_3$ which is nearly rotating about the 3 direction but which has a small component of ω along the 1 or 2 direction. In this problem I want you to use Mathematica or some other package to solve the Euler equations numerically for the case in which $\frac{I_1}{I_3} = \frac{1}{4}$, $\frac{I_2}{I_3} = \frac{1}{2}$ and at time $t=0$ $\frac{\omega_1}{\omega_3} = .2$, $\frac{\omega_2}{\omega_3} = 0$. Compare these solutions to the approximate ones.

Problems 11.25, 11.28, 11.31