HW3.

Alter the 1-D MHD code (mhd.m) used in the lecture 5 to solve for linear Alfven waves (u3 and B3 perturbations) for the orthogonal dipole coordinates (h\_mu, h\_L and h\_phi), based on the lecture notes 6. Solve for a magnetic field line at the geosynchronous (L = 6.6).

1. Use a hard-wall conducting boundary to show that your energy is conserved
2. Show a plot of the energies for the alpha = 0 case
3. Find the approximate wave period T for the alpha = 6 case