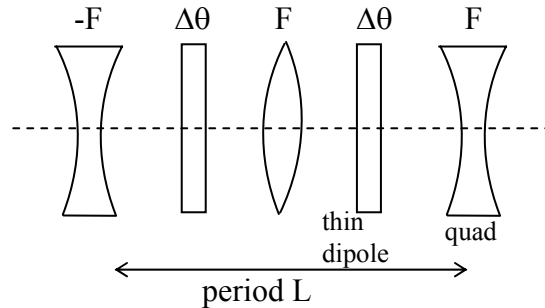# Homework Set #5
(due: Wednesday, February 12, 2003)

1. A circular accelerator consists of a periodic F0D0 lattice and thin bending magnets between the quadrupoles:

Show that the dispersion at the center of focusing (defocusing) quadrupoles $(\eta_+)(\eta_-)$ is given by

$$\eta_\pm = \frac{(\Delta\theta)(L/2)}{(\sin \mu/2)^2}\left(1 - \frac{1}{2}\sin \mu/2\right),$$

where μ is the phase advance per cell.