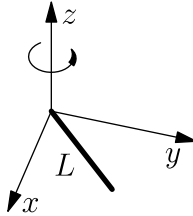


### J03E.3—Rotating Charged Rod

#### Problem

A rod of length  $L$  and negligible cross sectional area carries a total charge  $Q$  uniformly distributed along its length. It is rotated slowly with  $\omega \ll c/L$  in the  $x$ - $y$  plane as shown.



- What are the electric dipole moment and rate at which electric dipole energy is radiated?
- What are the magnetic dipole moment and rate at which magnetic dipole energy is radiated?