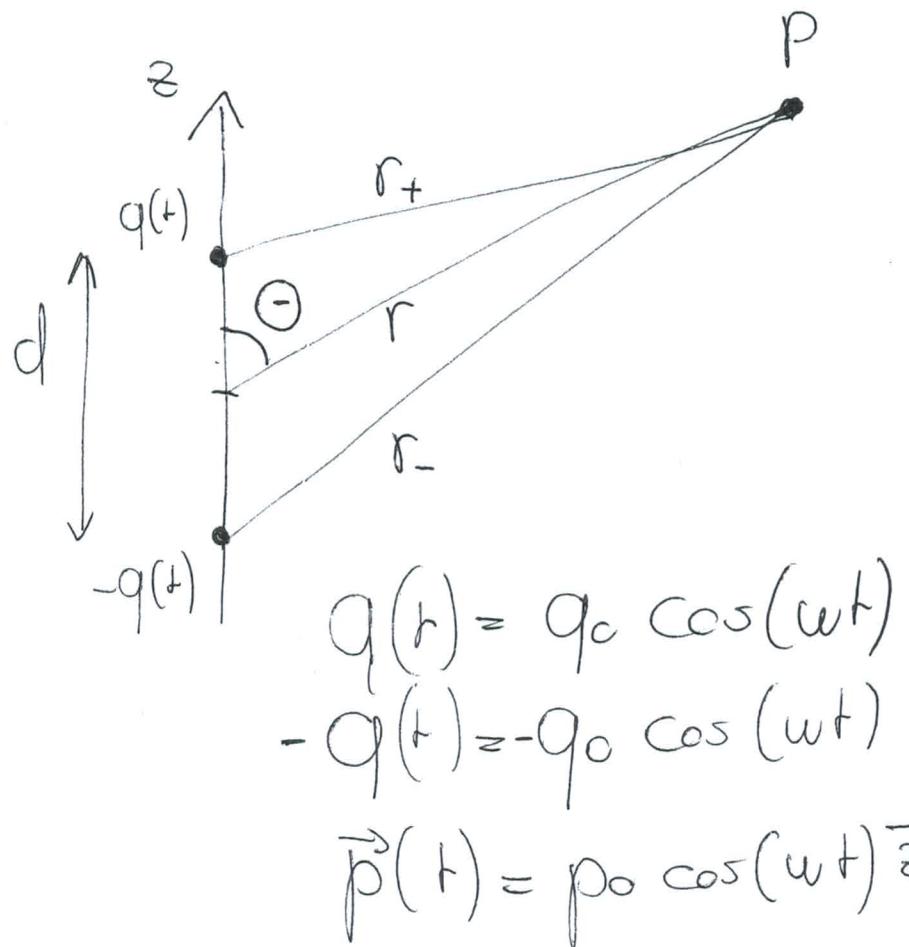


# Electric dipole radiation : Geometry

(4)



$$q(r) = q_0 \cos(\omega t)$$

$$-q(t) = -q_0 \cos(\omega t)$$

$$\vec{p}(t) = p_0 \cos(\omega t) \vec{z}$$

$$p_0 = q_0 d \text{ (dipole moment)}$$

Variables of interest:  $r, \Theta, t$

I perfect dipole :  $d \ll r$

II perfect dipole - special :  $d \ll \frac{c}{\omega} = \frac{\lambda}{2\pi}$

III radiation zone = far field :  $r \gg \frac{c}{\omega} = \frac{\lambda}{2\pi}$

