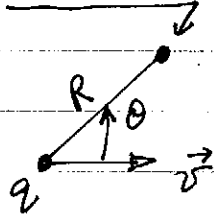


Problems Electrodynamics III

Due Mar 21st @ 1pm

- ① • Find the scalar potential of a point charge moving with constant velocity \vec{v}

$$\varphi(R, \theta, t) - ?$$



- Show that the result approaches the one found in electrostatics for non-relativistic velocities ($|\vec{v}| \ll c$).
- Determine the vector potential for the same configuration

$$\vec{A}(R, \theta, t) - ?$$

- ② An electron moving initially at constant speed $v_0 \ll c$ on a straight line is brought to rest with uniform deceleration a lasting for a time $t = v_0/a$.

- Determine the electromagnetic energy radiated during the deceleration.
- Compare radiated energy with electron's initial kinetic energy.