Electrodynamics II   Problems #7: Radiation from accelerated charges.   KSU

Assigned on Tuesday, April 19, 2016

Remember, you can volunteer to explain any of these at the board. You don't need to work them all out, these are the problems most closely related to the recent lectures.

Problems in Jackson's 3rd edition:

14.4 Time-averaged power radiated for simple sinusoidal motions
14.5 Radiation by a nonrelativistic particle making a head-on collision
14.7ab Nonrelativistic collision at impact parameter b, on a Coulomb potential
14.8 Relativistic collision at impact parameter b, on a Coulomb potential
14.9 Particle performing cyclotron motion in a magnetic induction B
14.11 Instantaneous radiation by particle moving in arbitrary applied EM fields
14.12 Instantaneous radiation by particle undergoing simple harmonic motion
14.13 Power per unit solid angle, for each frequency harmonic, for periodic motion
14.14 $dP_m/d\Omega$ for simple harmonic (periodic!) motion
14.15 $dP_m/d\Omega$ for uniform circular (periodic!) motion