

Assigned: Tuesday, April 5, 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:

12.1 Lagrangian and canonical momenta for a charge in a field

12.3 Relativistic motion in a uniform static \vec{E} field

12.4 Design of a velocity selector with crossed \vec{E} and \vec{B}

12.5 Trajectory of a charge in crossed \vec{E} and \vec{B}

12.6 Trajectory of a charge in \vec{E} and \vec{B} making angle θ

12.8 Hidden momentum in electromagnetic problems

12.10 Motion of energetic charges guided by Earth's magnetic dipole field

12.14 Alternative Lagrangian density for electromagnetic fields

12.19 Covariant description of conservation laws for EM fields