

Workbook



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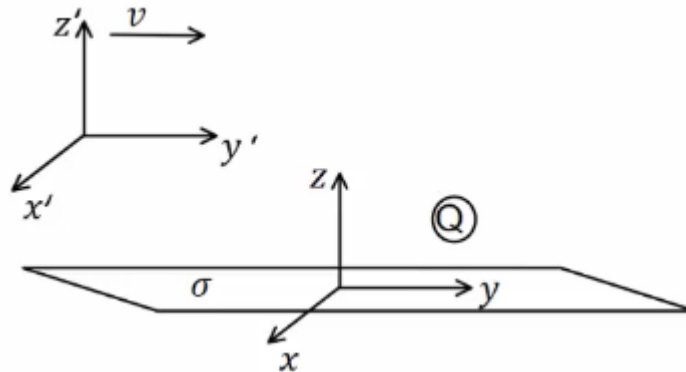
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Relativistic Transformations for Electric and Magnetic Fields

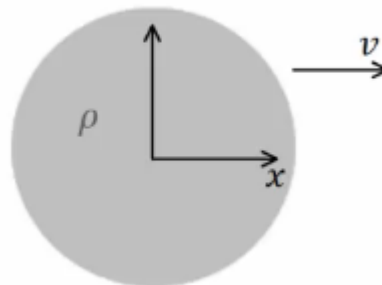
Relativistic Transformations for Electric and Magnetic Fields

Questions

- 1) A charged particle Q is placed on an infinite plane of charge density per unit area σ . The charged plane is located on the x - y plane. Find the force acting on the particle, relative to an observer moving with velocity v in the y direction. Assume that the particle is stationary relative to the plane.



- 2) A sphere has charge density per unit volume ρ . The sphere travels along the x axis with a velocity of v . Find the electric and magnetic fields inside the sphere relative to the lab, exactly when the center of the sphere passes the origin relative to the lab's reference frame.



*For the solutions go see the videos