

Assignment 6

1. Derive $E_y' = \gamma(v) \left(E_y + \frac{v}{c} B_x \right)$

$$B_x' = \gamma(v) \left(B_x + \frac{v}{c} E_y \right)$$

by considering a capacitor whose plates are parallel to the xz plane. The capacitor moves in the \hat{z} direction.

2. If $\vec{B}' = 0$ in frame S' , show $\vec{B} = \frac{\vec{v} \times \vec{E}}{c}$ in frame S .