

THE COULOMB AND AMPERE MAXWELL

LAWS

$$\underline{\nabla} \cdot \underline{E} = \frac{\rho}{\epsilon_0} = \frac{\phi}{2r^2} \left(1 + \frac{1}{1-\alpha} \right) \frac{\alpha}{1-\alpha}$$

$$\underline{\nabla} \times \underline{B} = \frac{1}{c^2} \frac{\partial \underline{E}}{\partial t} + \mu_0 \underline{J}$$

where :

$$\alpha = \frac{2m\epsilon}{\epsilon_0 c^2},$$

$$\underline{J} = J_r \underline{e}_r$$

$$J_r = \frac{A^{(0)}}{\mu_0} \frac{\alpha}{r^2} (2-\alpha)$$
