Chapter 22 Lecture Notes

Physics 2424 - Strauss

Formulas: $\Sigma B_{||}\,\Delta l = \alpha_0 I + \alpha_0 \varepsilon_0 \Delta \Phi_E / \Delta t$

$\Phi_E = EA$

$\lambda = c/f$

$$c = \frac{1}{\sqrt{\varepsilon_0 \alpha_0}}$$

$S = P/A = U/tA = uV/tA = uc$

$u = U/V = (1/2)\varepsilon_0 E^2 + 1/(2\alpha_0)B^2 = \varepsilon_0 E^2 = (1/\alpha_0)B^2$

1.

a changing electric flux would create a magnetic field, as well. So now we have the ideas that a changing electric flux creates a magnetic field, and a changing magnetic flux creates an electric field. Maxwell realized that this would lead to the production and self-propagation of electromagnetic waves. Let's see how this works.

1.2

are sinusoidally oscillating perpendicular to the direction of motion. See figure 22-7.

1.3.2