Lecture 22 Summary

Thomson scattering

Low energy photons ($\hbar\omega \ll mc^2$) scattering off of free electrons.

For non-relativistic electrons can ignore interaction with B field ($B \sim E/c$)

$$\left\langle \frac{dP}{d\Omega} \right\rangle = \frac{\mu_0}{c} \frac{e^4 E_0^2}{32\pi^2 m^2} \sin^2\theta$$

$$\langle P \rangle = \frac{\mu_0}{c} \frac{e^4 E_0^2}{12\pi m^2}$$

} Power radiated by a single electron

Independent of ω of incoming EM radiation.