

E157 Lecture 2 Day Plan

Clarify rule of thumb: $\lambda/10 < S$... have problems when λ starts to approach t line length

Any questions before quiz

Quiz + Team Quiz + Talk through solution

Extracting Velocity from wave equations:

- EM waves: $d^2E/dx^2 = \mu_0\epsilonpsilon_0 d^2E/dt^2 \rightarrow \text{sqrt}(1/\mu_0\epsilonpsilon_0)$
 - Note: index of refraction = c/c_{medium}
- Sound waves: $d^2p/dx^2 = \rho_0/B d^2p/dt^2 \rightarrow \text{sqrt}(B/\rho_0)$

Derive diffusion equation from rc wire model – $d^2v/dx^2 = rc dv/dt$