

PHYS 436: Lecture # 18

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Rectangular wave guide

Definition 0.1. *Wave guide restricts the transmission of energy to one direction.*

Allows only frequencies of

$$\omega = c\sqrt{k^2 + (m\pi/a)^2 + (n\pi/b)^2} \quad (1)$$

General Wave Guide

$$E(r, t) = E(r_{\perp}) \exp(i(kz - \omega t)) \quad (2)$$

$$B(r, t) = B(r_{\perp}) \exp(i(kz - \omega t)) \quad (3)$$

(4)