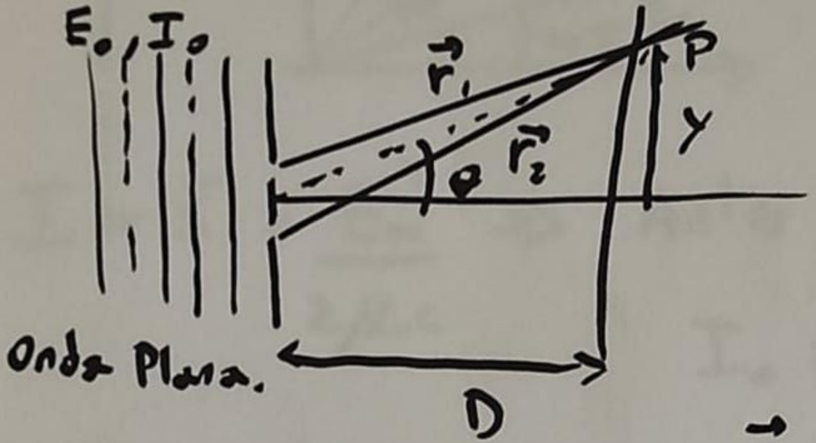
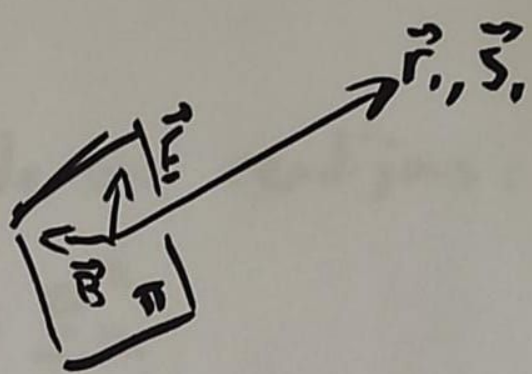
(cont. R.F.T. pr. 12, 3)

· Int. constructiva: $\Delta\phi = \pm 2\pi m$

· " destructiva: $\Delta\phi = \pm\left(m+\frac{1}{2}\right)2\pi$





$\vec{r}_1 \parallel \vec{r}_2 \Rightarrow \vec{S}_1 \parallel \vec{S}_2 \Rightarrow$

$\vec{E}_1$ & $\vec{E}_2 \in$ plano π

pero están desfasados.

$$E = E_0 \operatorname{sen}(\omega t) + E_0 \operatorname{sen}(\omega t + \Delta\phi)$$

$$= E_0 \operatorname{sen}\left(\omega t + \frac{\Delta\phi}{2} - \frac{\Delta\phi}{2}\right) + E_0 \operatorname{sen}\left(\omega t + \frac{\Delta\phi}{2} + \frac{\Delta\phi}{2}\right)$$

$$= E_0 \operatorname{sen}\left(\omega t + \frac{\Delta\phi}{2}\right)\cos\left(-\frac{\Delta\phi}{2}\right) \cancel{- E_0 \cos\left(\omega t + \frac{\Delta\phi}{2}\right)\operatorname{sen}\left(\frac{\Delta\phi}{2}\right)}$$

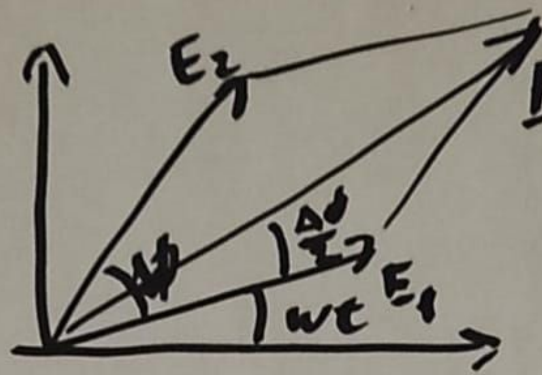
$$+ E_0 \operatorname{sen}\left(\omega t + \frac{\Delta\phi}{2}\right)\cos\left(\frac{\Delta\phi}{2}\right) \cancel{+ E_0 \cos\left(\omega t + \frac{\Delta\phi}{2}\right)\operatorname{sen}\left(\frac{\Delta\phi}{2}\right)}$$

$\operatorname{sen}(A \pm B) = \operatorname{sen}A \cos B \pm \cos A \operatorname{sen}B$

$\cos(A) = \cos(-A)$

$$= 2E_0 \cos\left(\frac{\Delta\phi}{2}\right) \operatorname{sen}\left(\omega t + \frac{\Delta\phi}{2}\right)$$

(cont. R.F.T. pr. 12, 4)



$\underline{E}$ / $|\underline{E}| = 2E_0 \cos\frac{\Delta\phi}{2}$

$I = \bar{S} = \frac{E_m^2}{2\mu_0 c} \Rightarrow$ Antes de las rendijas:

$$I_0 = \frac{E_0^2}{2\mu_0 c}$$

Luego: $I = \frac{4E_0^2 \cos^2\frac{\Delta\phi}{2}}{2\mu_0 c}$

$$\therefore\ I = I_0\, 4\cos^2\left(\frac{\Delta\phi}{2}\right)$$

• Relación entre diferencia de fase ($\Delta\phi$) y dif. de camino óptico (Δc_0)

$$\Delta\phi = K_s(r_2 - r_1) = \frac{2\pi}{\lambda_s}(r_2 - r_1) = \frac{2\pi}{\lambda_0} n_s(r_2 - r_1) = \frac{2\pi}{\lambda_0}\Delta c.o$$

medios   vacío

· Int. constructiva $\Delta\phi = 2\pi m$ ó $\Delta c_0 = m\lambda_0$