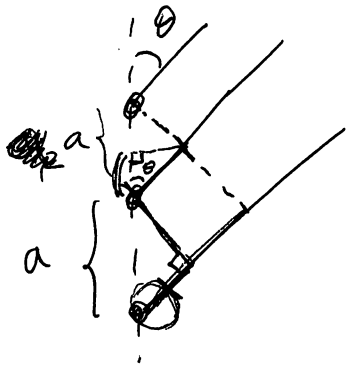
06/03/2023



$\cos(\theta) = \frac{n\lambda}{a/2}$ ✓ $= \frac{2n\lambda}{a}$

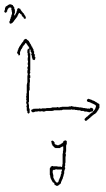
$a\cos(\theta) = n\lambda$

$-\frac{a}{v}\cdot\frac{\omega}{c}\frac{c}{k_p}$

$\Rightarrow a\cos(\theta) - \frac{a}{\beta}\frac{\lambda_p}{\lambda_0} = n\lambda$

$q/v \cdot \frac{\omega}{c k_p} \cdot c =$

$\frac{\omega}{k_p}$ 1/L



$\lambda_p = \frac{a}{n}\left(\frac{1}{\beta} - \cos(\theta)\right) \Leftrightarrow \frac{n\lambda_p}{a} = \frac{1}{\beta} - \cos(\theta)$

$\Rightarrow \boxed{n\lambda_p = -a\cos(\theta) + \frac{a}{\beta}}$ Light

$\cos(\theta) = \left(\frac{1}{\beta} - \frac{n\lambda_p}{a}\right)$

$\lambda_p = \frac{2\pi}{k_p} =$

$\cos(\theta) = \lambda_p\left(\frac{\omega}{2\pi v} + \frac{n}{a}\right) =$

$= \left(\frac{\lambda_p \omega}{2\pi v} + \frac{n\lambda_p}{a}\right)$

$= \left(\frac{\omega}{v k_p} + \frac{n\lambda_p}{a}\right)$

$\frac{a}{\beta} \rightarrow a\cdot\frac{\omega}{v k_0}$

$k_p = \frac{\omega}{c}$

$\frac{\omega a}{c k_p \beta}$ $\frac{k_0}{k_p}$

$\downarrow$

$\left(\frac{\lambda_p}{\lambda_0}\cdot\frac{a}{\beta}\right)$

SPS: $\boxed{n\lambda_p = a\cos(\theta) + \frac{\omega a}{v k_p}}$

$= a\cos(\theta) + \frac{a\omega\lambda_p}{2\pi v}$

$\Rightarrow \lambda_p\left(\frac{n}{a} + \frac{\omega}{2\pi v}\right) = \cos(\theta)$

$n\lambda_p = a\left(\cos(\theta) - \frac{\lambda_p}{\lambda_0}\frac{1}{\beta}\right)$

Light: $\lambda_p \rightarrow \lambda_0 \Rightarrow n\lambda_0 = a\left(\cos(\theta) - 1/\beta\right)$