

(28)

relat de dispersion de l'onde: $\hbar^2 = \frac{\omega^2}{c^2}$

$$\left(\frac{\omega}{c}\right)^2 = k_n^2 + k_z^2 \Rightarrow k_z^2 = \frac{\omega^2}{c^2} - k_n^2$$

$$k_n = \frac{1}{a} \Rightarrow \boxed{k_z^2 = \frac{\omega^2}{c^2} - \left(\frac{1}{a}\right)^2}$$

relat de dispersion

$$v_g = \frac{\omega}{k_z}$$

$$v_g = \frac{d\omega}{dk_z} = \frac{c^2}{v_g} =$$