1.2 Elektromagnetische Wellen

$$\vec{k}\cdot\left(\vec{r} \mp \vec{n}\, v t\right) = \vec{k}\cdot\vec{r} \mp \frac{\vec{k}^2}{|\vec{k}|} v t = \vec{k}\cdot\vec{r} \mp \omega t$$

$$\int_0^\infty \exp\{-i\omega(k)t\}\left[A(k)\exp\{ikx\}\right]dk +$$

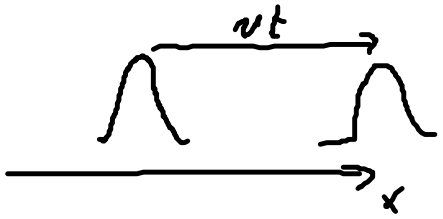
$$+ \int_{-\infty}^{0} \exp\{-i\omega(k)t\}\left[A(k)\exp\{ikx\}\right]dk$$

$$\Downarrow \quad k \to -k$$

$$\int_0^\infty \exp\{-i\omega(k)t\}\left[A(-k)\exp\{-ikx\}\right]dk \quad \text{mit } A(-k) = A^*(k)$$

$$\int_0^\infty \exp\{-i\omega(k)t\}\left[A^*(k)\exp\{-ikx\}\right]dk$$

$$= \int_0^\infty \exp\{-i\omega(k)t\}\left[A(k)\exp\{ikx\}\right]^* dk$$



$$\Delta n \ll n$$

$$\frac{\Delta n}{\lambda} \approx \frac{\partial n}{\partial x} = |\nabla n|$$