

1.2 Elektromagnetische Wellen

$$\vec{k} \cdot (\vec{r} \mp \vec{v}t) = \vec{k} \cdot \vec{r} \mp \frac{\vec{k}^2}{|\vec{k}|} vt = \vec{k} \cdot \vec{r} \mp \omega t$$

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

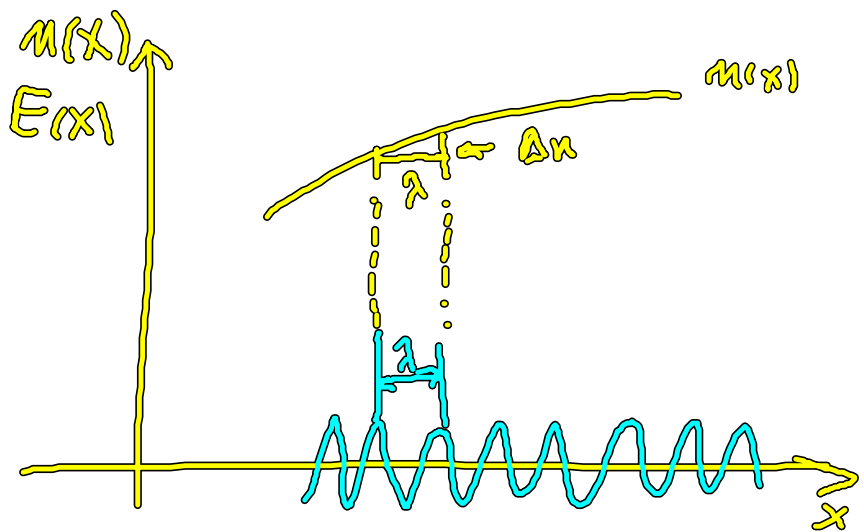
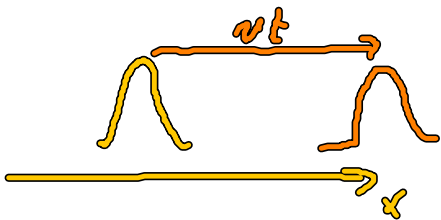
$$+ \int_{-\infty}^0 \exp\{-i\omega(k)t\} [A(k) \exp\{ikx\}] dk$$

↓ $k \rightarrow -k$

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

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

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



$$\Delta n \ll n$$

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