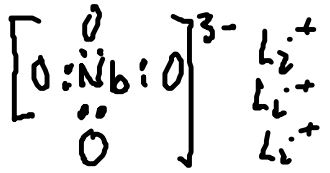
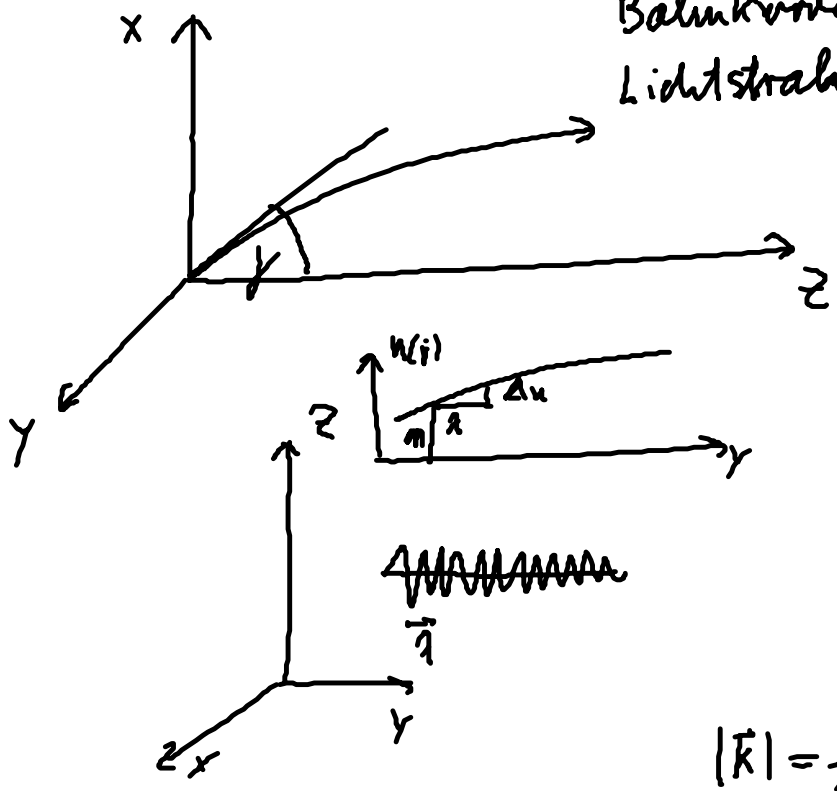
Kapitel 5. Optische Fasern

$Li: 1s^2 2s$

$Nb: [Kr]\, 4d^4 5s$



Am. $\varphi = 0$



Balnkurve des Lichtstrahles

$\vec{q}$

$|\vec{k}| = \frac{\omega}{v}$

ebene Welle $\vec{E}(\vec{r},t) = \vec{E}_0 \exp\{i(\omega t - \vec{k}\cdot\vec{r})\}$ $n = konst$

$\vec{E}(\vec{r},t) = \vec{E}_0 \exp\{i\omega(t - \frac{1}{v}\frac{\vec{k}}{|\vec{k}|}\cdot\vec{r})\}$ $k_0 = \frac{\omega}{c}$

mit $|\vec{k}| = \frac{\omega}{v} = \frac{\omega}{c}\frac{c}{v} = \frac{\omega}{c} n = k_0 n$

$S(\vec{r}) = n\frac{\vec{k}}{|\vec{k}|}\cdot\vec{r} = \frac{1}{k_0 n} n\,\vec{k}\cdot\vec{r} = \frac{1}{k_0}\vec{k}\cdot\vec{r} \Rightarrow k_0 S(\vec{r}) = \vec{k}\cdot\vec{r}$

im Falle $n(\vec{r}) = konst$