$$\varepsilon_r\mu_r = \frac{c^2}{v^2} \Rightarrow \varepsilon_0\mu_0\varepsilon_r\mu_r = \frac{1}{v^2} = \varepsilon\mu$$

$$\frac{k^2}{c^2} = \frac{\alpha^2}{4\omega} \quad ; \quad \sigma = \frac{2n\varepsilon_0\omega}{\mu_r}k = \frac{\cancel{2}n\varepsilon_0\cancel{\omega}}{\mu_r}\frac{\alpha c}{\cancel{2\omega}}$$

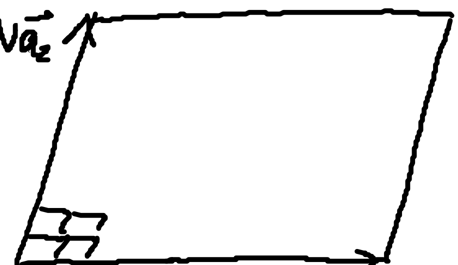
$$\varepsilon_0\mu_0 = \frac{1}{c^2} \qquad = \frac{n\varepsilon_0\mu_0\alpha c}{\mu_r\mu_0} = \frac{n\alpha}{\mu c}$$

wir setzen $\mu = \mu_0\mu_r \approx \mu_0$, $\mu_r \approx 1$

Elementarzelle = Periodizitätsgebiet $\vec{a}_2$  Ω $\vec{a}_1$

Grundgebiet

$N\vec{a}_2$

$V = N^3\Omega$  $N^3 = N_A$

$N\vec{a}$

$\vec{b}_1, \vec{b}_2, \vec{b}_3$ Basisvektoren im reziproken Gitter

$$\int_0^t \exp\{\dots\}\exp\{\dots\}\,dt'' = \frac{\exp\{-\frac{t''}{\tau}\}\exp\{-i\omega t''\}}{-\frac{1}{\tau}(1+i\omega\tau)}\Bigg|_0^\infty$$

$$= \frac{\tau}{1+i\omega\tau} = \frac{\tau(1-i\omega\tau}{1+\omega^2\tau^2}$$