

## O3OSTINS

## Graphs of n and K

### 1. Dielectric Function for models with one oscillator in the infrared spectral region.

The dielectric constant for high frequencies is set arbitrarily to  $\epsilon_{\text{inf}} = 20$ .  
The model parameters are  $S$ ,  $\gamma$ ,  $\nu_0$ . We set  $z = n - iK$

$S$  and  $\gamma$  are dimensionless,  
 $\nu_0$  in  $\text{cm}^{-1}$

$$i := \sqrt{-1}$$

$\nu := 900, 901 \dots 1200$

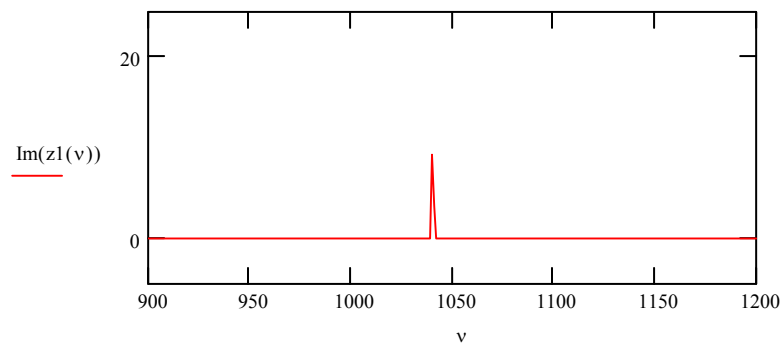
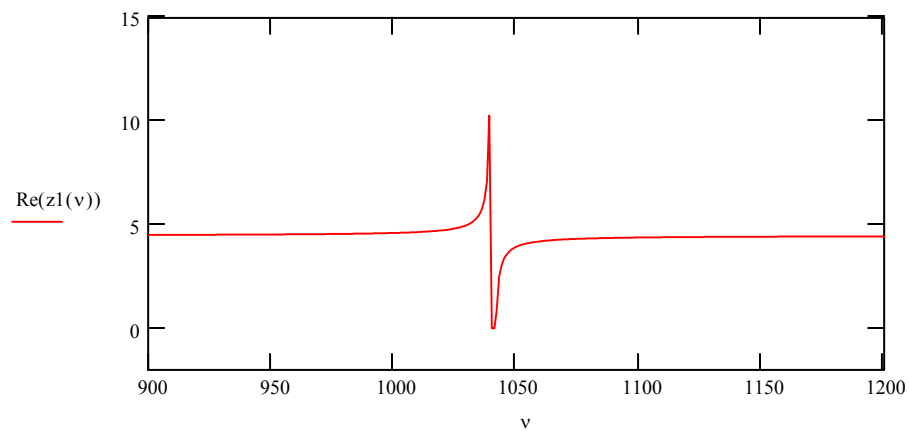
$\epsilon_{\text{inf}} := 20$

$$z(\nu) := \sqrt{\epsilon_{\text{inf}} + \frac{S}{1 - \left(\frac{\nu}{\nu_0}\right)^2 - \frac{\gamma \cdot \nu}{\nu_0}}}$$

$S \equiv .09$

$\gamma \equiv .02$

$\nu_0 \equiv 1050$



2. For an optical thin medium with little absorption we have the following approximations. The parameters must be chosen such that  $n$  is close to 1 and  $K$  is small.

$$vv := 0, .1 .. 2 \quad a \equiv .5 \cdot 10^{-5} \quad c \equiv 10^{-3}$$

$$n(vv) := 1 + a \cdot \left[ \frac{1 - vv^2}{(1 - vv^2)^2 + vv^2 \cdot c^2} \right] \quad k(vv) := \frac{a \cdot (vv \cdot c)}{(1 - vv^2)^2 + vv^2 \cdot c^2}$$

