

$$\Delta = e^{iK_{22}d}$$

$$\frac{1}{2} \begin{matrix} \nearrow \Gamma_{\sigma}^{12} \\ \searrow t_{\sigma}^{12} \end{matrix}$$

#300

$$\epsilon_{Ag}^{Drude}(\omega) = \epsilon_b - \frac{\omega_p^2}{\omega(\omega + i\gamma)}$$

$$\begin{aligned} \Gamma_{\sigma} &= \Gamma_{\sigma}^{12} + \underbrace{t_{\sigma}^{12} \Delta \Gamma_{\sigma}^{23} \Delta t_{\sigma}^{21}} + \\ &+ \underbrace{t_{\sigma}^{12} \Delta \Gamma_{\sigma}^{23} \Delta \Gamma_{\sigma}^{21} \Delta \Gamma_{\sigma}^{23} \Delta t_{\sigma}^{21}} + (\dots) \end{aligned}$$

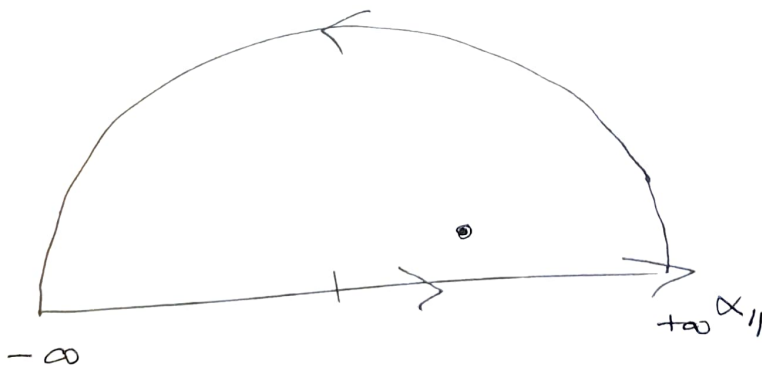
$\sigma = s, p$

$$= \Gamma_{\sigma}^{12} + t_{\sigma}^{12} \Delta \Gamma_{\sigma}^{23} \Delta t_{\sigma}^{21} \left[1 + \Delta \Gamma_{\sigma}^{21} \Delta \Gamma_{\sigma}^{23} + (\dots) \right]$$

$$= \Gamma_{\sigma}^{12} + t_{\sigma}^{12} \Delta \Gamma_{\sigma}^{23} \Delta t_{\sigma}^{21} \sum_{n=0}^{\infty} (\Delta \Gamma_{\sigma}^{21} \Delta \Gamma_{\sigma}^{23})^n$$

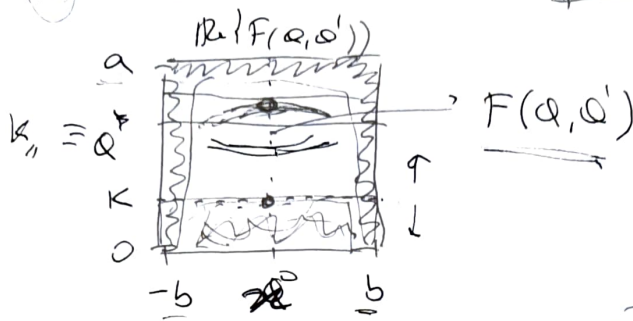
$$= \Gamma_{\sigma}^{12} + \frac{t_{\sigma}^{12} \Delta \Gamma_{\sigma}^{23} \Delta t_{\sigma}^{21}}{1 - \Delta \Gamma_{\sigma}^{21} \Delta \Gamma_{\sigma}^{23}}$$

$$= \Gamma_{\sigma}^{12} + \frac{\Delta^2 t_{\sigma}^{12} t_{\sigma}^{21} \Gamma_{\sigma}^{23}}{1 - \Delta^2 \Gamma_{\sigma}^{21} \Gamma_{\sigma}^{23}} \equiv \hat{R}_p \frac{K_p}{k - K_p}$$



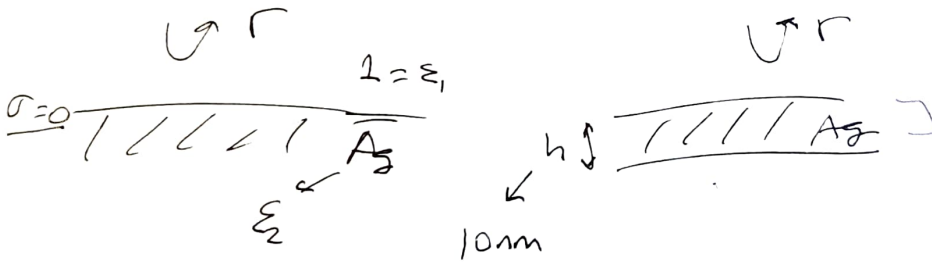
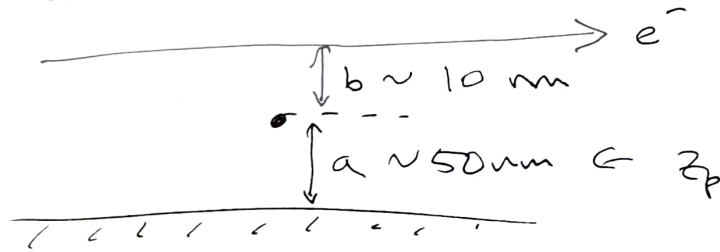
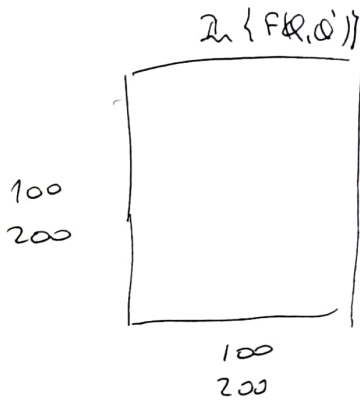
$$\int_{-b}^b d\mathbf{q} \int_0^a d\mathbf{q}' F(\mathbf{q}, \mathbf{q}') \quad \omega$$

0.001 eV - 1 eV



0.001 eV
 $\hbar\omega = 0.01$ eV
 0.1 eV
 1 eV

b
 z_p



$\eta \rightarrow \epsilon \in \mathbb{C}$
 K