$$\frac{d\sigma}{d\Omega} = \frac{\mu_i \mu_f}{(2\pi\hbar^2)^2} \frac{k_f}{k_i} \left| T^{(1)} + T^{(2)}_{succ} - T^{(1)}_{NO} \right|^2 \tag{0.0.1}$$

$$G(\mathbf{r}_{dF}, \mathbf{r}'_{dF}) = i \sum_l \sqrt{2l+1} \frac{f_l(k_{dF}, r_<) g_l(k_{dF}, r_>)}{k_{dF} r_{dF} r'_{dF}} \left[Y^l(\hat{r}_{dF}) Y^l(\hat{r}'_{dF}) \right]_0^0 . \tag{0.0.2}$$

$$2\Delta \approx \delta E \approx \delta\left(\frac{p^2}{2m}\right)_{\epsilon_F} \approx v_F \delta p.$$

$$\frac{\delta p}{p_F} = \frac{2\Delta}{m v_F^2} = \frac{\Delta}{\epsilon_F} \ll 1.$$

$$\xi = \delta x = \frac{\hbar}{\delta p} = \frac{\hbar v_F}{2\Delta}$$

$$g(k) \sim \delta(\mathbf{k}, \mathbf{k}_F + i\hat{\mathbf{k}}_F/\xi),$$

$$\phi_0(\mathbf{r}) \sim e^{-r/\xi} e^{ik_F r}.$$

$$\phi_0(\mathbf{r}) \sim e^{-r/\xi} \cos k_F r,$$

$$\phi_0(\mathbf{r}) \sim K_0(r/\pi\xi) \cos k_F r,$$