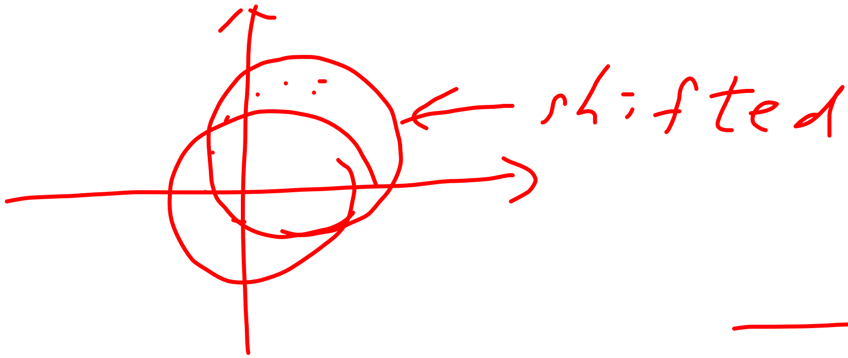
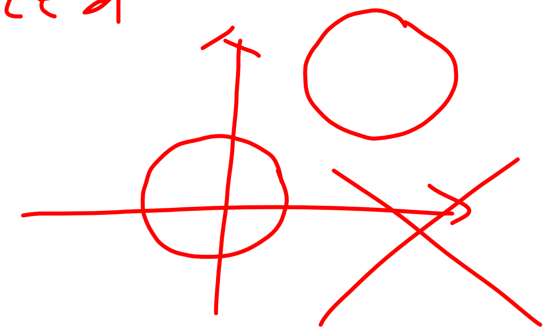
$$\frac{dv_k}{dt} = a = \frac{\hbar \dot{k}}{m^*} \qquad \dot{k} = \frac{dk}{dt}$$

$$\frac{F}{m} = \frac{ma}{m} \qquad = \frac{-e}{m^*}\left(\vec{E} + \vec{v}_k \times \vec{B}\right)$$

Lorentz force

Compensating factors!





$$\nabla_k f^0 = \frac{\partial f^0}{\partial \varepsilon} \frac{\partial \varepsilon}{\partial k} \hat{k}$$ ← unit vector

$$\frac{\partial \varepsilon}{\partial k} = \frac{\hbar^2 k}{m^*}$$ ← $$\varepsilon = \frac{\hbar^2 k^2}{2m^*}$$

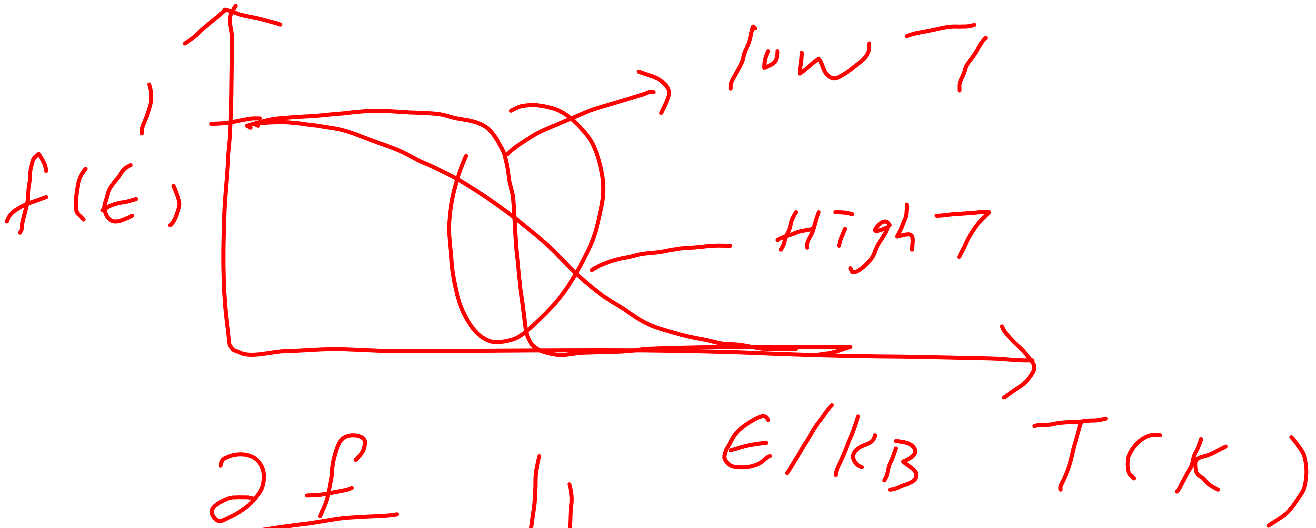
$$= \frac{\hbar p}{m^*}$$ $$= \frac{1}{2} m^* v^2$$

$$= \hbar v_k$$

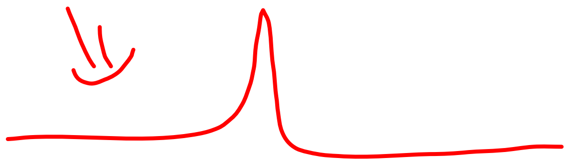
$$\cdots \nabla_k g - \qquad = g$$

電導

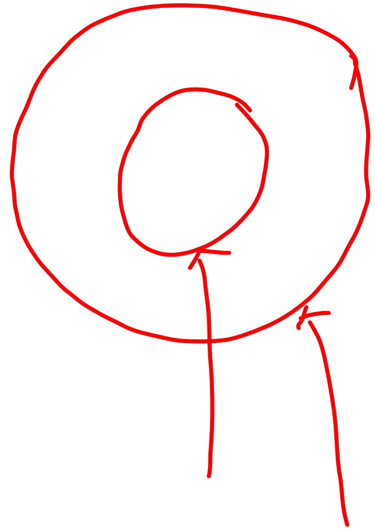
$$I = nevA$$



$$\frac{\partial f}{\partial \varepsilon}$$



σ_{xy} σ



$$\sigma = n_{2D} e \mu$$

$$\frac{\hbar^2 k_F^2}{2m^*}$$

$$\mu = \frac{e\tau}{m^*}$$

$$\left(\frac{m^*}{\pi \hbar^2}\right) E_F$$ DOS in 2D

$$= n_{2D}$$ $\#/m^2 \cdot J$