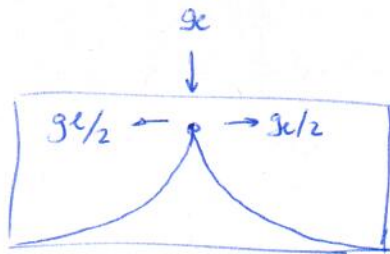


Back to chapter 5:



$$J_h(x=0^+) = q \cdot \frac{g_c}{2}$$

$$P' = B \cdot \exp(-x/L_h)$$

and ~~J_{diff}~~ $J_{diff} = -q \cdot D_h \cdot \frac{dP'}{dx} = +q \cdot D_h \cdot \frac{B}{L_h} \cdot \exp(-x/L_h) \quad (1)$

$$J_h(x=0) = q \cdot D_h \cdot \frac{B}{L_h} = q \cdot \frac{g_c}{2} \Rightarrow B = \frac{g_c}{2} \cdot \frac{L_h}{D_h}$$

$$P' = \frac{g_c}{2} \cdot \frac{L_h}{D_h} \cdot \exp(-x/L_h)$$

Diffusion
velocity:

$$J_h^{diff} = q \cdot P' \cdot v_{diff}$$

$$v_{diff} = \frac{J_h^{diff}}{q \cdot P'(x)} = \frac{q \cdot \frac{D_h}{L_h} \cdot \frac{g_c}{2} \cdot \frac{L_h}{D_h} \cdot \exp(-x/L_h)}{q \cdot \frac{g_c}{2} \cdot \frac{L_h}{D_h} \cdot \exp(-x/L_h)} = \frac{D_h}{L_h} \quad (1)$$

$$v_{diff}^h = \frac{D_h}{L_h}$$