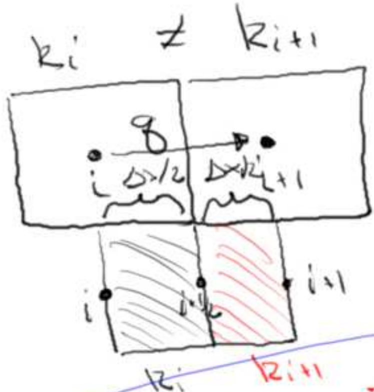
$$T_{i+1/2} = \frac{k_{i+1/2} A_{i+1/2}}{B_\alpha \mu_{i+1/2} \Delta x_{i+1/2}}$$

Assume $A, \Delta x, \mu$ constant $\quad T_{i+1/2} = \frac{k_{i+1/2} A}{B_\alpha \mu \Delta x}$



$$q = \frac{k_{i+1/2} A}{\mu B_\alpha \Delta x}\left(P_{i+1} - P_i\right) \Rightarrow \left(P_{i+1} - P_i\right) = \frac{q \mu B_\alpha \Delta x}{k_{i+1/2} A}$$

$$\left(P_{i+1/2} - P_i\right) + \left(P_{i+1} - P_{i+1/2}\right) = \frac{q \mu B_\alpha \Delta x}{2 k_i A} + \frac{q \mu B_\alpha \Delta x}{2 k_{i+1} A} = \frac{q \mu B_\alpha \Delta x}{k_{i+1/2} A}$$

$$\left(P_{i+1} - P_i\right)$$

$$k_{i+1/2} = 2\left(\frac{1}{k_i} + \frac{1}{k_{i+1}}\right)^{-1}$$

Harmonic Average

$$k_{i+1/2} = \frac{k_i + k_{i+1}}{2} = \frac{k_i}{2} \quad (k_{i+1} \to 0)$$

If A & μ are constant

$$\Delta x_{i+1/2} = \frac{\Delta x_i + \Delta x_{i+1}}{2}$$

$$k_{i+1/2} = \frac{\Delta x_i + \Delta x_{i+1}}{\frac{\Delta x_i}{k_i} + \frac{\Delta x_{i+1}}{k_{i+1}}}$$

If μ is constant

$$\left(\frac{kA}{\Delta x}\right)_{i+1/2} = \frac{2 k_i A_i k_{i+1} A_{i+1}}{k_i A_i \Delta x_{i+1} + k_{i+1} A_{i+1} \Delta x_i}$$

$$T_{i+1/2} = \left(\frac{1}{B_\alpha \mu}\right)\left(\frac{kA}{\Delta x}\right)_{i+1/2}$$