

ANISOTROPIC DIFF

$$\frac{\partial T}{\partial t} = -\nabla \cdot \underline{Q} + S$$

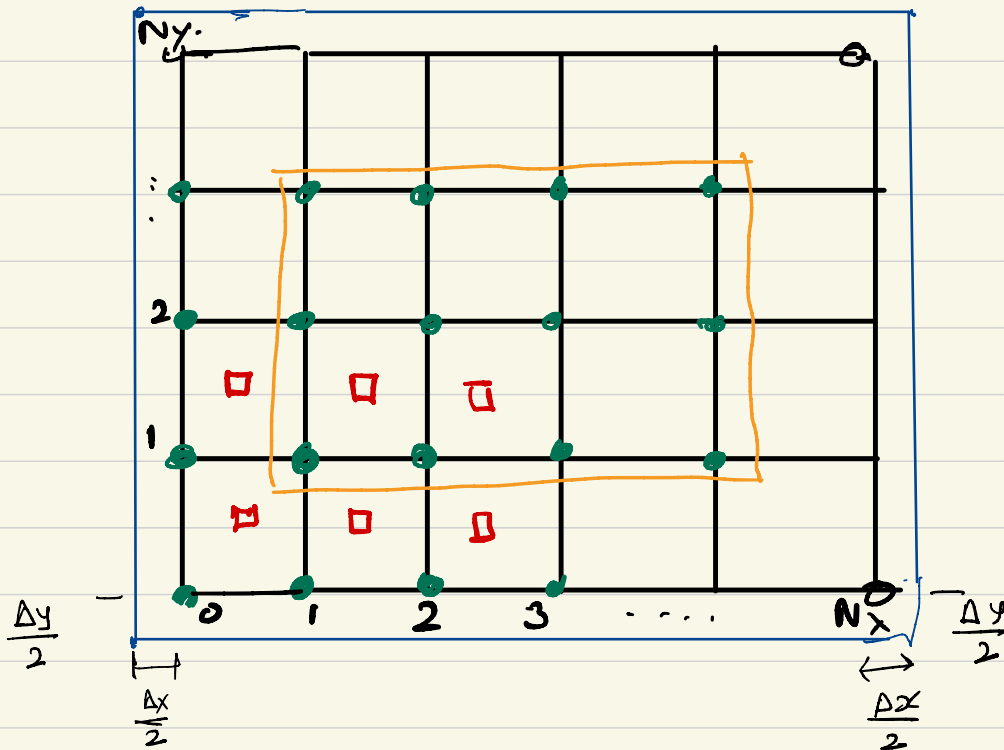
$$\underline{Q} = -\underline{D} \cdot \nabla T$$

$$Q_i = -D_{ij} \frac{\partial T}{\partial x_j}$$


$$D_{ij} = D_{ji}$$

$$\underline{D} \equiv K_{||} \underline{b}\underline{b} + (I - \underline{b}\underline{b}) K_{\perp}$$

$$\frac{K_{||}}{K_{\perp}} \gg 1$$

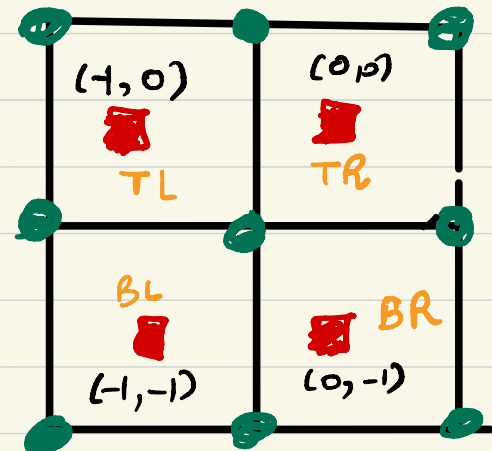
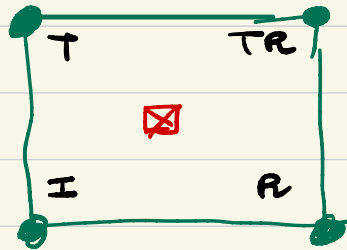


\underline{D} ← cell-center
 \underline{Q} ← cell-center
 T ← nodes
 S ← nodes

 update range for T

$$\frac{\partial T}{\partial x} = \frac{(T_{TR} + T_R) - (T_T + T_I)}{2\Delta x}$$

$$\frac{\partial T}{\partial y} = \frac{(T_{TR} + T_T) - (T_R + T_I)}{2\Delta y}$$



$$Q_x = -\left(D_{xx} \frac{\partial T}{\partial x} + D_{xy} \frac{\partial T}{\partial y}\right)$$

$$Q_y = -\left(D_{yx} \frac{\partial T}{\partial x} + D_{yy} \frac{\partial T}{\partial y}\right)$$