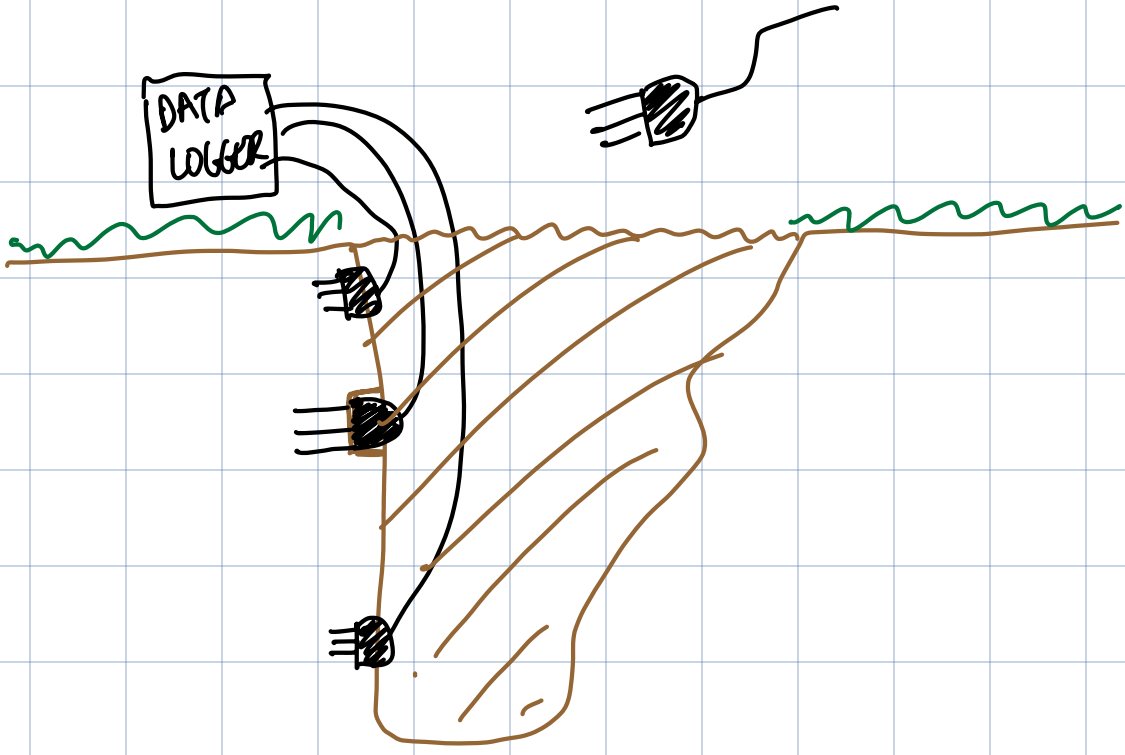
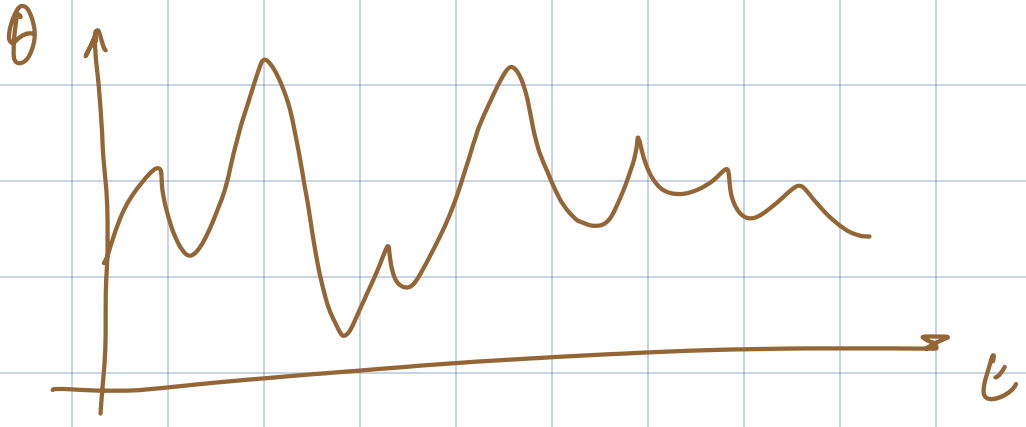
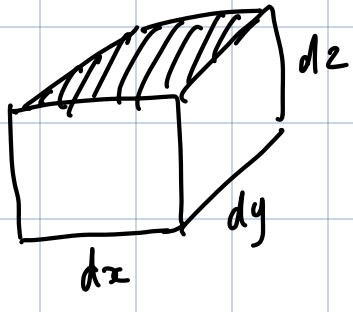




$$\theta = V_L / V_T$$

$$\theta = \frac{V_L}{dx\,dy\,dz}$$



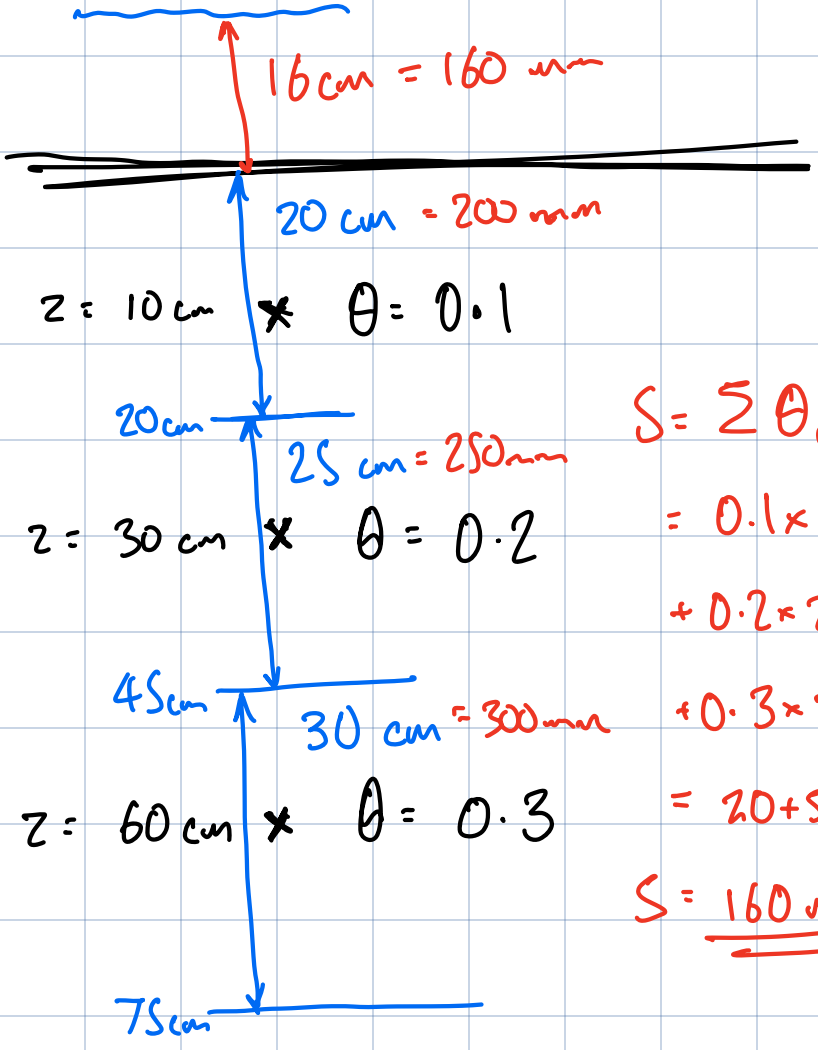
$$S = V_L / A$$

$$= V_L / dx.dy$$

$$V = dx.dy.dz$$

$$V_L = \theta \cdot \cancel{dx\,dy\,dz} = S \cdot \cancel{dx\,dy}$$

$$S = \theta \cdot dz$$

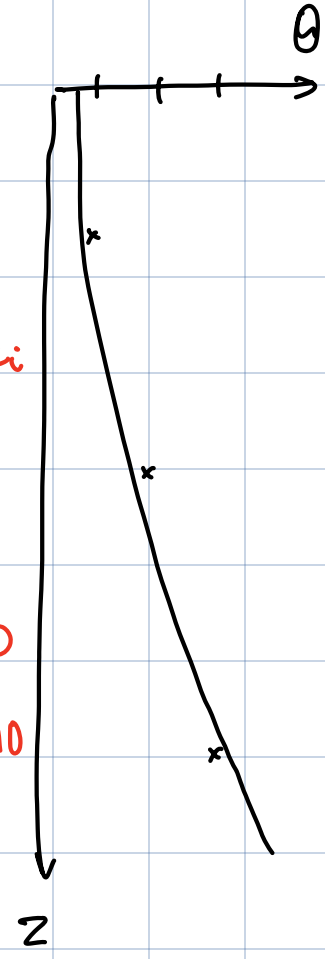


$$S = \sum \theta_i \cdot \Delta z_i$$

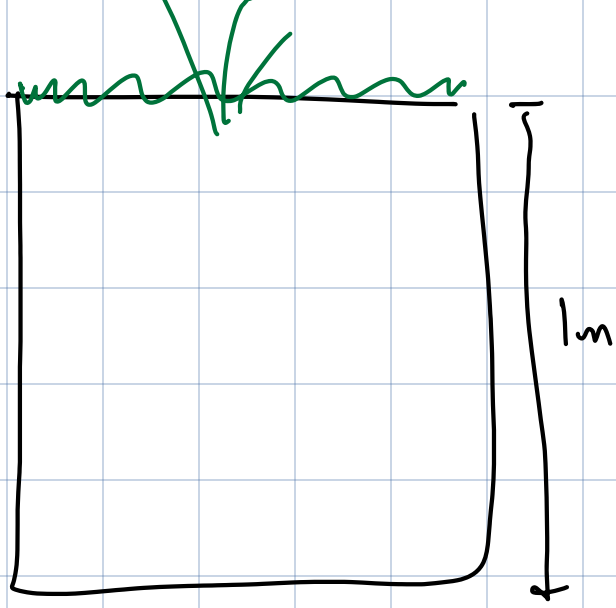
$$= 0.1 \times 200 + 0.2 \times 250 + 0.3 \times 300$$

$$= 20 + 50 + 90$$

$$S = \underline{160 \text{ mm}}$$



$S = 170$ mm $\rightarrow$ $\theta_{1,2,3}$



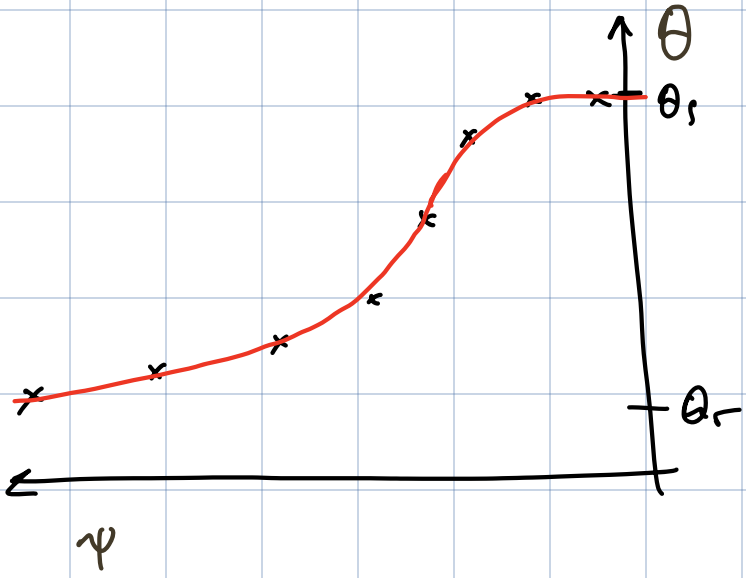
$n = 0.4$

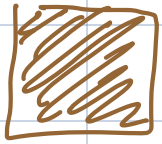
$S_{sat} = n \times 1 = 0.4\ m$

$= 400\ mm$

$S_{FC} = 250\ mm$

$S_{PWP} = 50\ mm$





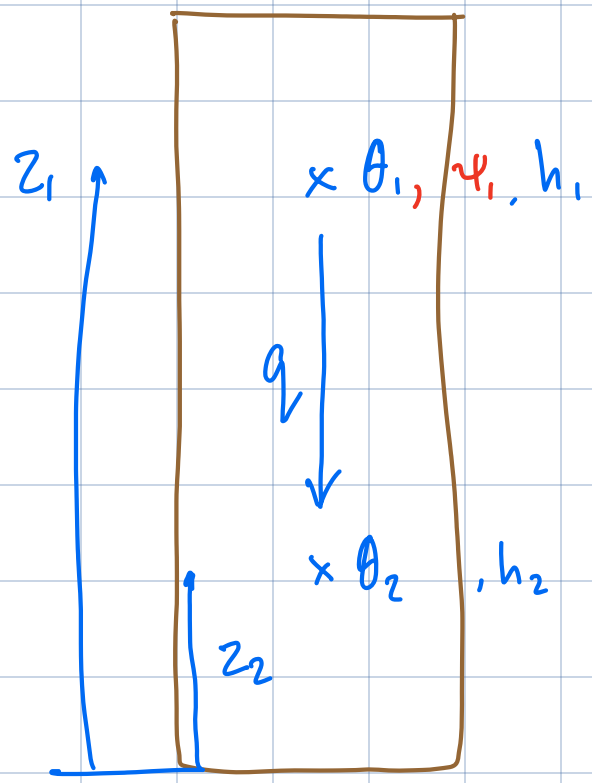
VG: $\Theta = \theta_r + (\theta_s - \theta_r)\left(\frac{1}{1+(\alpha\psi)^n}\right)^m$

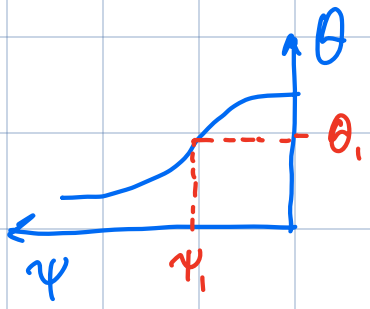
$\theta = f(\psi)$

↖ ↖ State variables.

$\theta_r, \theta_s, \alpha, n, m$

parameters.





$\theta_1 = \theta_2$

$\psi_1 = \psi_2$

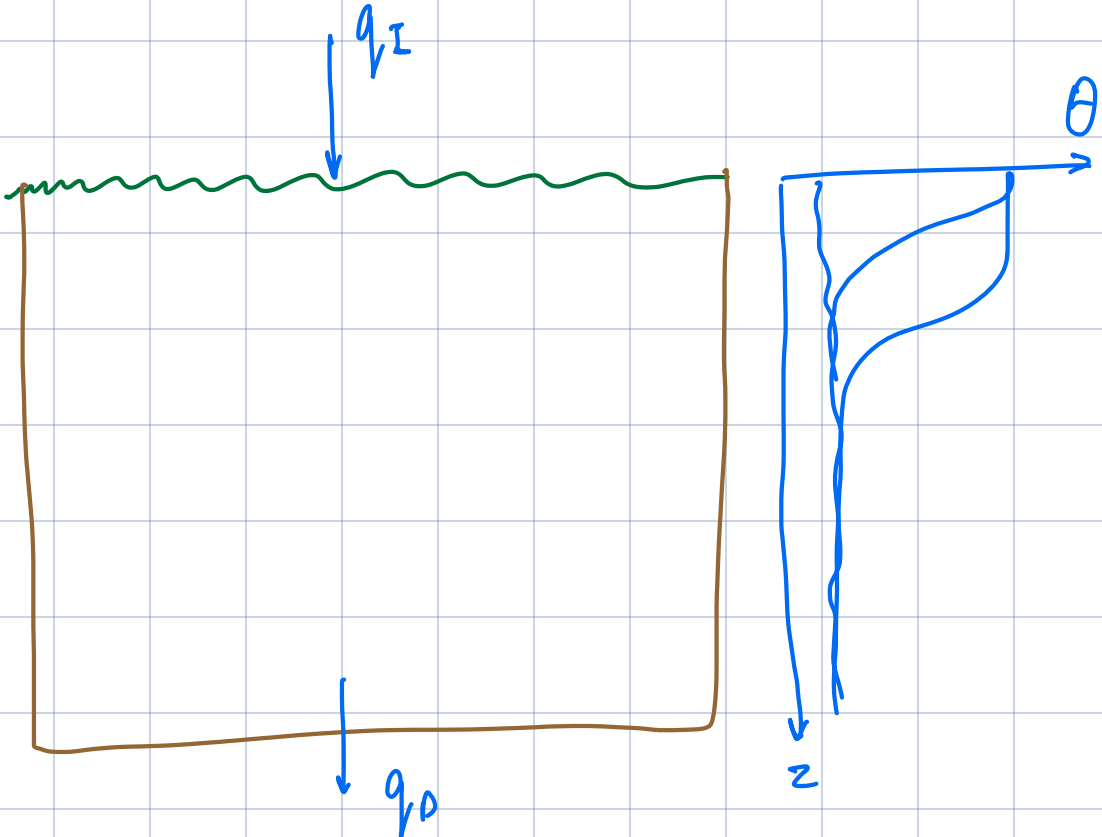
$z_1 > z_2$

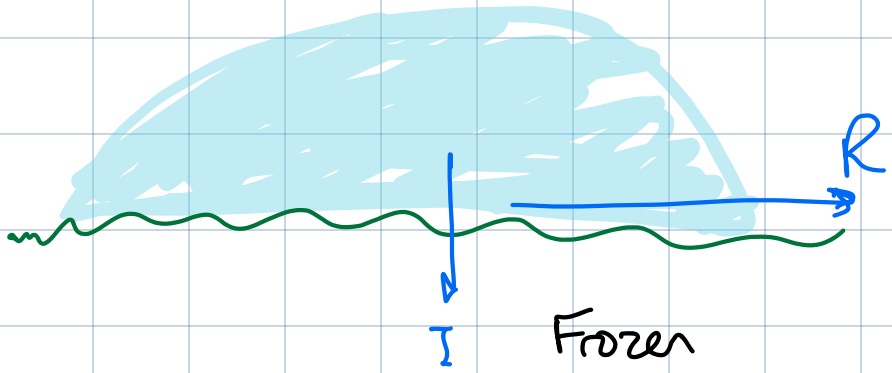
$\downarrow$

$h_1 = z_1 + \psi_1$

$h_2 = z_2 + \psi_1$

$h_1 > h_2$




R
I
Frozen
Soil !