

$$\frac{\partial}{\partial y} \left(\left(1 + we \left(\frac{n-1}{2} \right) \left(\frac{\partial u}{\partial y} \right)^2 \right) \frac{\partial u}{\partial y} \right) = \frac{\partial p}{\partial x} \quad \text{--- (1)}$$

For Series solution want to put

$$u = u_0 + we u_1 + (we)^2 u_2 \quad \text{and} \quad p = p_0 + we p_1 + we^2 p_2 \quad \text{--- (2)}$$

want to put equation (2) into (1) and then compare the power of $(we)^0$, $(we)^1$ and $(we)^2$. After comparing we get zeroth order problem and 1st order and ~~zero~~ second order problem. After that problems will be solved by using BCs

$$u(h) = -K \quad \text{and} \quad u(-h) = 1$$

$$u_0 + we u_1 + we^2 u_2 = -K, \quad u_0 + we u_1 + we^2 u_2 = 1$$

$$u_0(h) = K \quad \text{and} \quad u_0(-h) = 1 \quad \longrightarrow \text{BCs for zeroth order}$$

$$\text{and } u_1(h) = 0, \quad u_1(-h) = 0 \quad \longrightarrow \text{BCs for 1st order}$$

$$\text{and } u_2(h) = 0, \quad u_2(-h) = 0 \quad \longrightarrow \text{BCs for 2nd order}$$