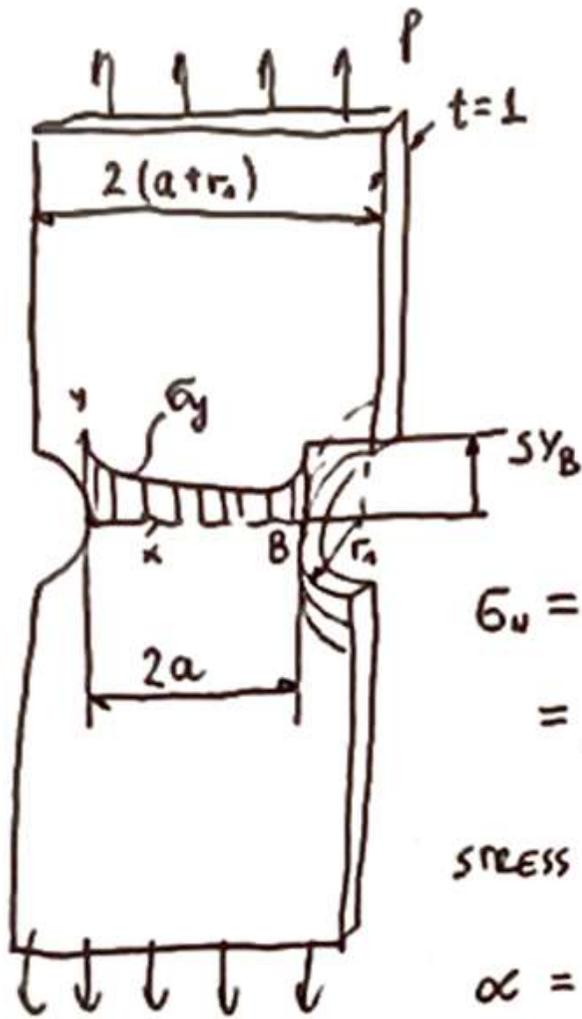


PLANE STRESS, PLANE STRAIN,

AXIS-SYMMETRY



$$F = p \cdot 2(a+r_1) t$$

$$\begin{aligned} \sigma_u &= \frac{F}{2a \cdot t} = \frac{p \cdot 2(a+r_1) t}{2a \cdot t} \\ &= \frac{p(a+r_1)}{a} \end{aligned}$$

STRESS CONCENTRATION :

$$\alpha = \frac{S_{YB}}{\sigma_N} = \frac{S_{YB}}{p \left(\frac{a+r_1}{a} \right)}$$



$$F_{ax} = p \cdot \pi (a+r_1)^2$$

$$\sigma_{N,ax} = \frac{F_{ax}}{\pi a^2}$$

$$\alpha_{ax} = \frac{S_{YB}}{\sigma_{N,ax}} = \frac{S_{YB}}{p \left(\frac{a+r_1}{a} \right)^2}$$