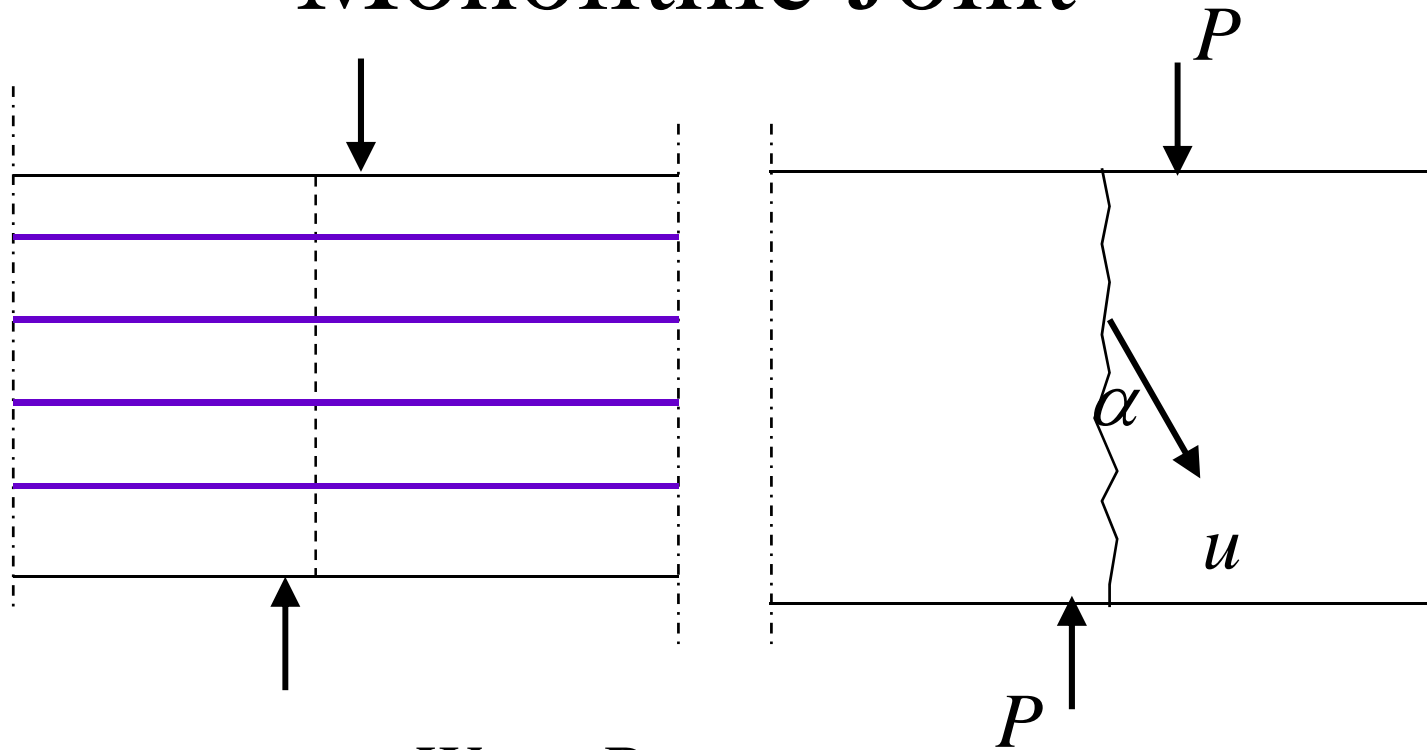


Shear in Joints

- Monolithic Concrete
- Strength of Different Types of Joints
 - Crack as a Joint
 - Construction Joint
 - Butt Joints
 - Keyed Joints

Monolithic Joint

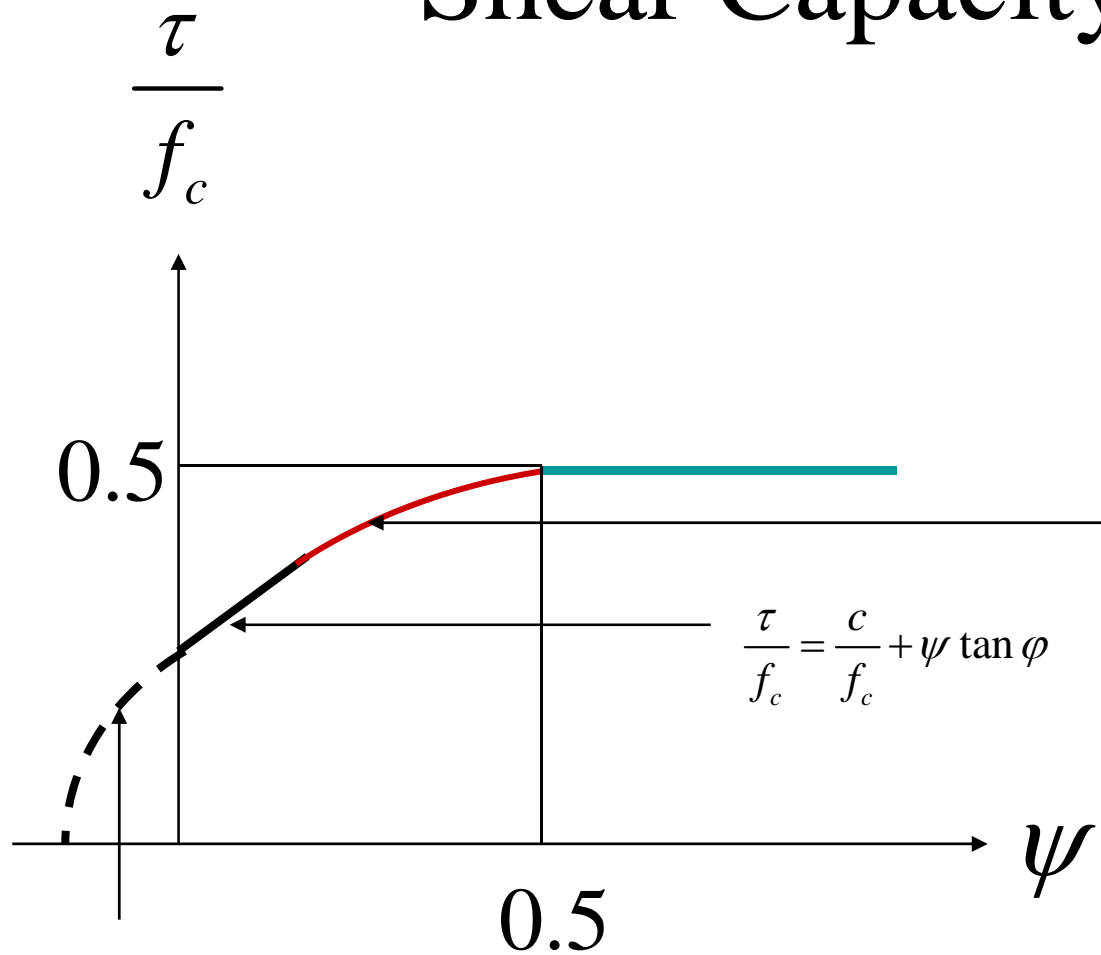


$$W_E = Pu \cos \alpha$$

$$D_R = A_s f_Y u \sin \alpha$$

$$D_c = \frac{1}{2} f_c u (1 - \sin \alpha)$$

Shear Capacity

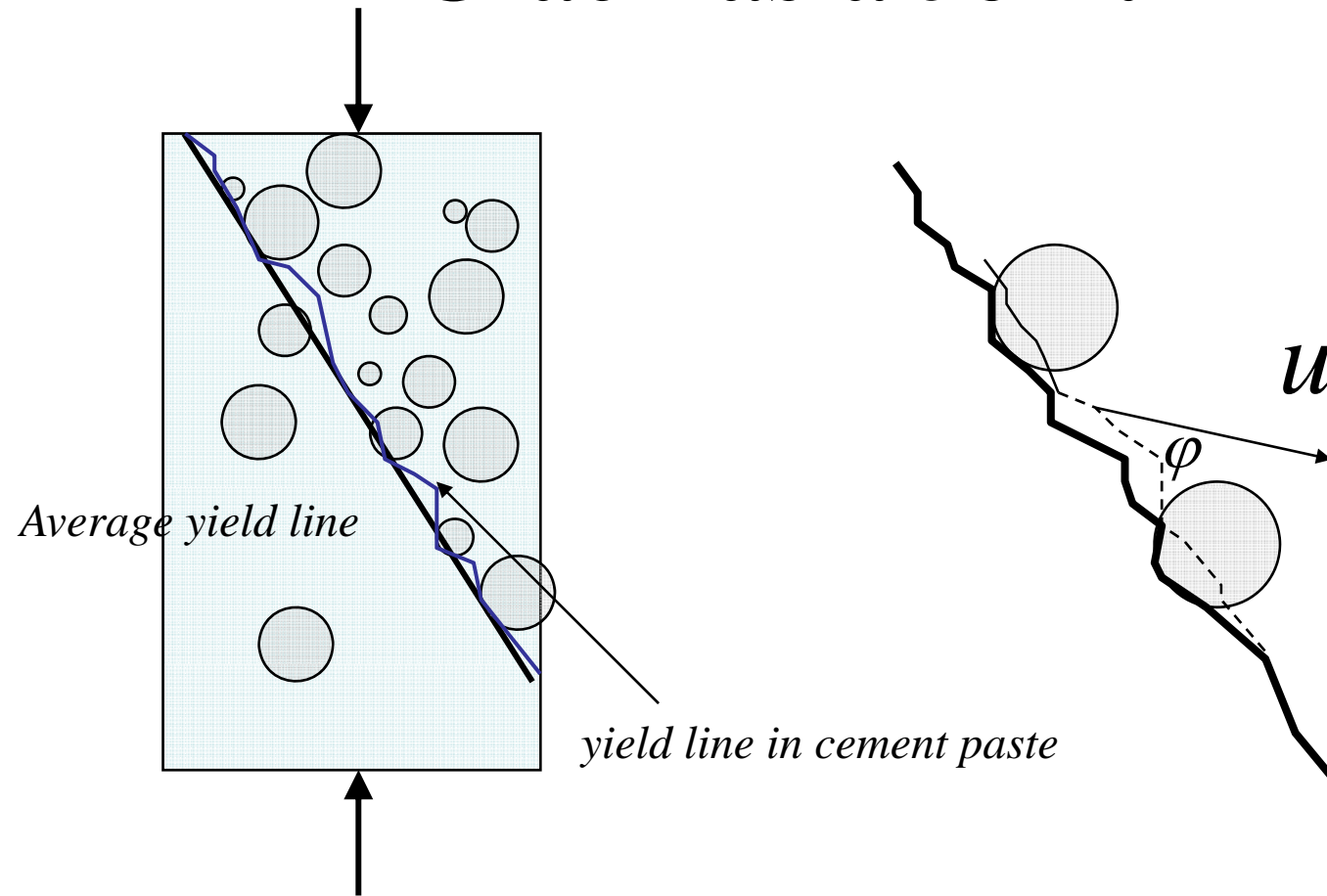


$$\frac{\tau}{f_c} = \sqrt{\psi(1-\psi)}$$

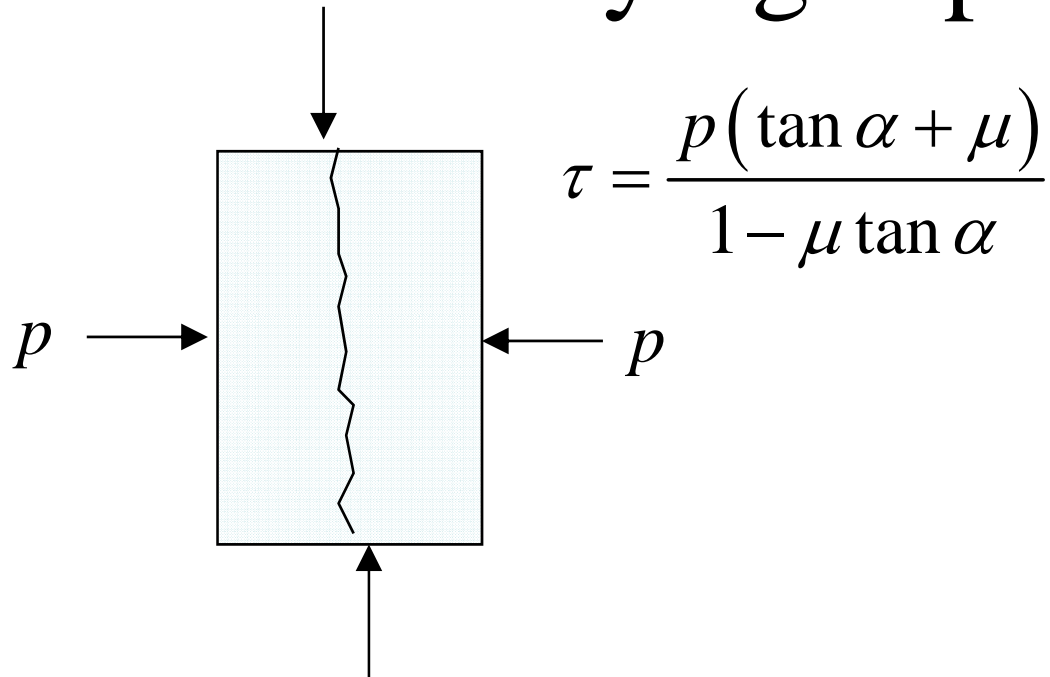
$$\frac{\tau}{f_c} = \frac{c}{f_c} + \psi \tan \varphi$$

$$\frac{\tau}{f_c} = \sqrt{\left(\psi + \frac{f_t}{f_c}\right) \left[1 - 2 \frac{f_t}{f_c} \frac{\sin \varphi}{1 - \sin \varphi} - \left(\psi + \frac{f_t}{f_c}\right)\right]}$$

Crack as a Joint



Load carrying capacity by friction



$$\sigma = p \frac{\tan \beta + \mu \tan \beta \tan(\beta - \alpha)}{\tan(\beta - \alpha) - \mu}$$

