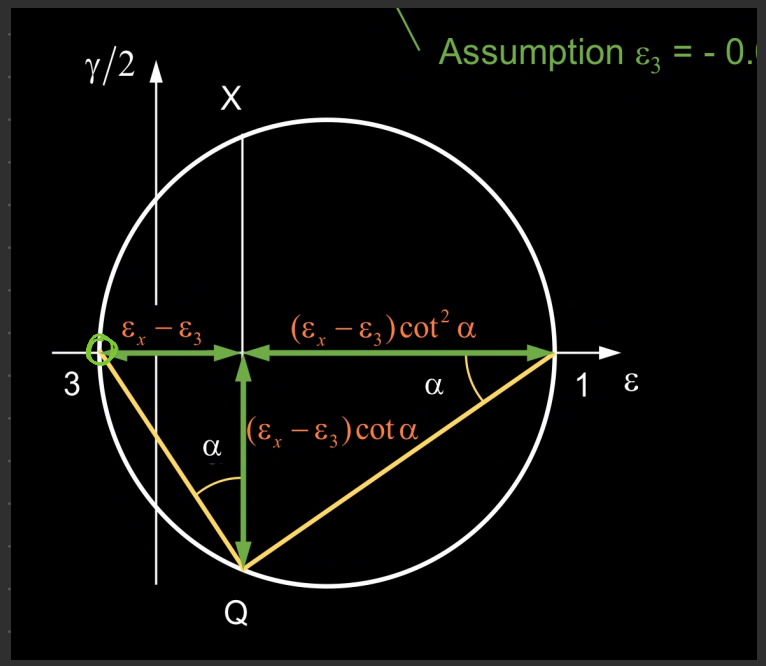

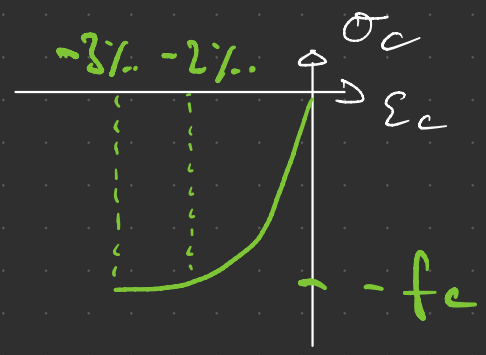

$$\varepsilon_{sy} \approx \frac{f_{sy}}{E_s} \approx \frac{500\,MPa}{205\,GPa}$$

Tension Stiffening: $\varepsilon_{sym} \approx 0.8 \cdot \varepsilon_{sy}$

≈ 0.002

$\varepsilon_{sym} \approx 0.002$ $\qquad$ $\varepsilon_{cm} = -0.002$

$$\varepsilon_1 = \varepsilon_x + (\varepsilon_x + 0.002)\cdot\cot^2\alpha$$

Regime 1: $\cot^2\alpha = \dfrac{\rho_x f_s - \sigma_x}{\rho_z f_s - \sigma_z}$

$$k_c \cdot f_c' = \frac{(f_c')^{2/3}}{0.4 + 30\varepsilon_1} \Rightarrow$$

Regime 1: Change of boundary, $\sigma_{c3} \le k_c f_c'$

Regime 2: Change of load-carrying capacity

$\tau_{xz}^2 = (k_c \cdot f_c' - \rho_z f_s + \sigma_z)(\rho_z f_s - \sigma_z)$