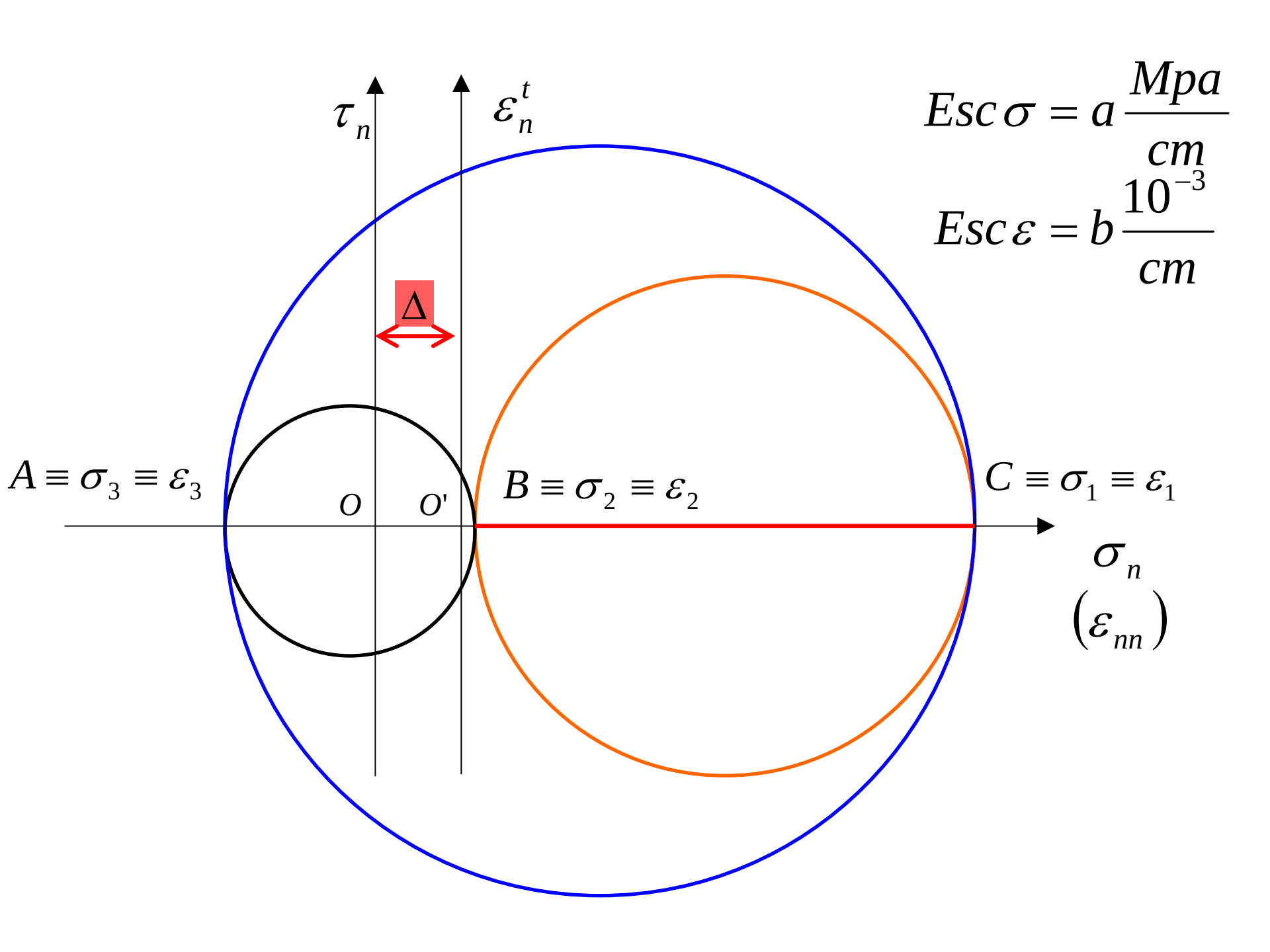
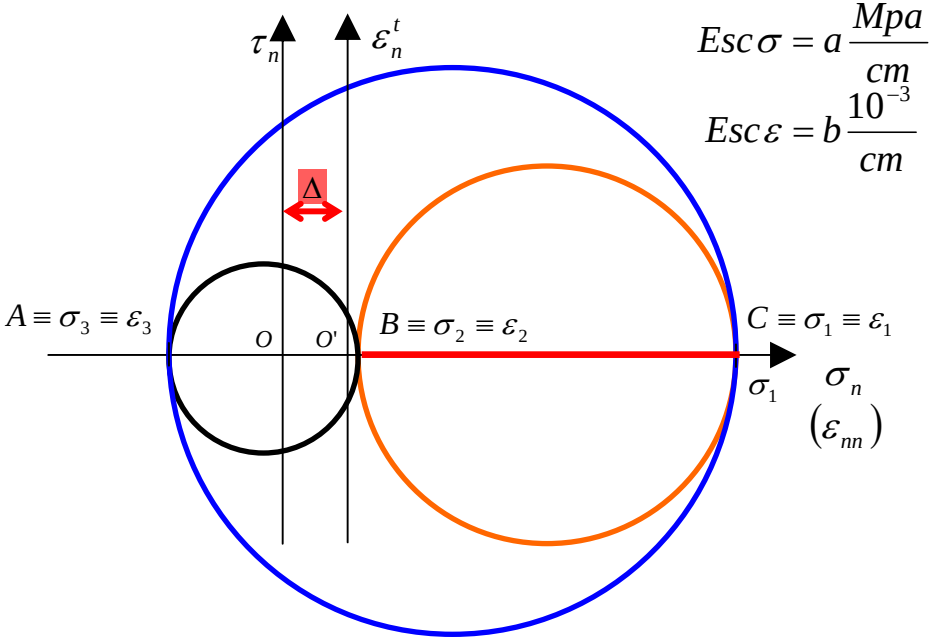

τ_n
ε_n^t
$Esc\,\sigma = a\,\frac{Mpa}{cm}$
$Esc\,\varepsilon = b\,\frac{10^{-3}}{cm}$
Δ
$A \equiv \sigma_3 \equiv \varepsilon_3$
O
O'
$B \equiv \sigma_2 \equiv \varepsilon_2$
$C \equiv \sigma_1 \equiv \varepsilon_1$
σ_n
(ε_{nn})



Determinación de $Esc\,\varepsilon$

$$CB = \frac{\sigma_1 - \sigma_2}{Esc\,\sigma} = \frac{\varepsilon_1 - \varepsilon_2}{Esc\,\varepsilon}$$

$$Esc\,\varepsilon = \frac{\varepsilon_1 - \varepsilon_2}{\sigma_1 - \sigma_2}\,Esc\,\sigma$$

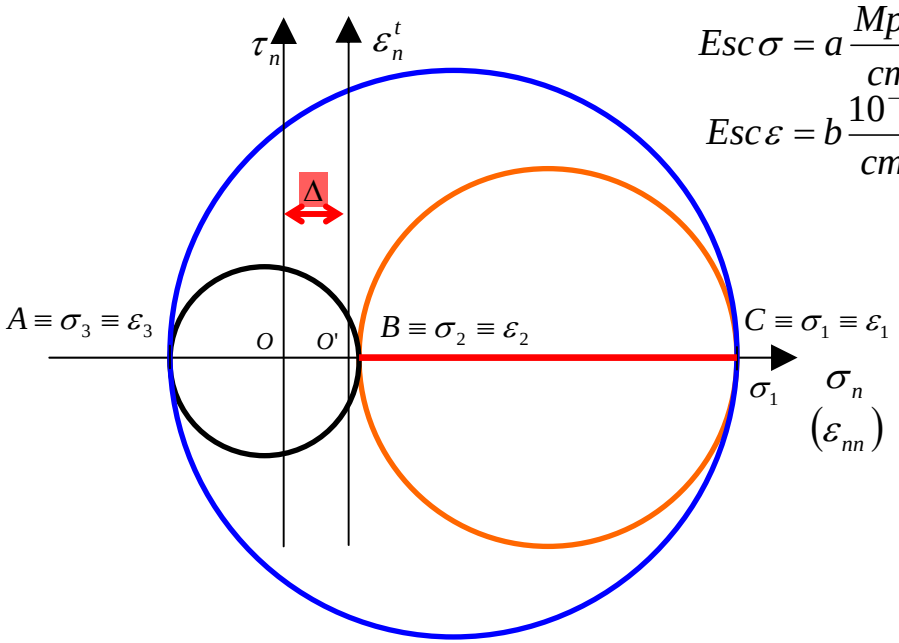
$$\varepsilon_1 = \frac{1}{E}\left(\sigma_1 - \mu\sigma_2 - \mu\sigma_3\right)$$

$$\varepsilon_2 = \frac{1}{E}\left(-\mu\sigma_1 + \sigma_2 - \mu\sigma_3\right)$$

$$\varepsilon_1 - \varepsilon_2 = \frac{1+\mu}{E}\left(\sigma_1 - \sigma_2\right)$$

$$Esc\,\varepsilon = \frac{\frac{1+\mu}{E}\left(\sigma_1 - \sigma_2\right)}{\sigma_1 - \sigma_2}\,Esc\,\sigma$$

$$Esc\,\varepsilon = \frac{1+\mu}{E}\,Esc\,\sigma$$



$$Esc\,\sigma = a\,\frac{Mpa}{cm}$$

$$Esc\,\varepsilon = b\,\frac{10^{-3}}{cm}$$

Determinación del desplazamiento Δ

$$\Delta = O'O = CO - CO'$$

$$OC = \frac{\sigma_1}{Esc\,\sigma} \qquad CO' = \frac{\varepsilon_1}{Esc\,\varepsilon} = \frac{E}{1+\mu}\frac{\varepsilon_1}{Esc\,\sigma}$$

$$\Delta Esc\,\sigma = \sigma_1 - \frac{E}{1+\mu}\varepsilon_1$$

$$\Delta Esc\,\sigma = \sigma_1 - \frac{1}{1+\mu}\left(\sigma_1 - \mu\sigma_2 - \mu\sigma_3\right) = \frac{\sigma_1 + \mu\sigma_1 - \sigma_1 + \mu\sigma_2 + \mu\sigma_3}{1+\mu}$$

$$\Delta Esc\,\sigma = \frac{\mu}{1+\mu}\left(\sigma_1 + \sigma_2 + \sigma_3\right)$$