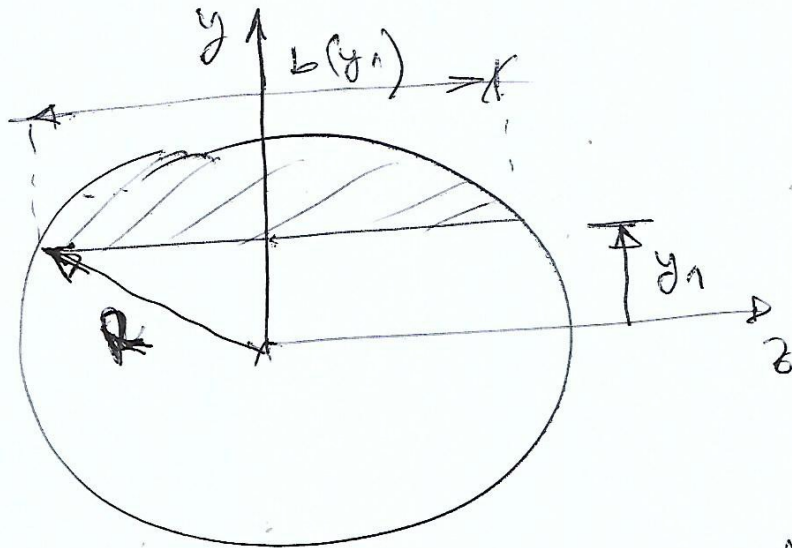


Repartition de contrainte
de cisaillement τ_{xy} due au effort tranchant $T_y = T$

* cas d'une section circulaire de rayon R

$$\tau_{xy} = \frac{T \cdot A_z}{I_z \cdot b(y_1)}$$



$$I_z = \frac{\pi R^4}{4} \quad A = \pi R^2 \quad b(y_1) = 2 \sqrt{R^2 - y_1^2}$$

$$A_z = 2 \int_{y_1}^R \sqrt{R^2 - y_1^2} \, dy_1$$

$$A_z = \frac{2}{3} \cdot (R^2 - y_1^2)^{3/2}$$

$$\Rightarrow \tau_{xy} = \frac{4}{3} \cdot \frac{T}{A} \left(1 - \frac{y_1^2}{R^2} \right)$$