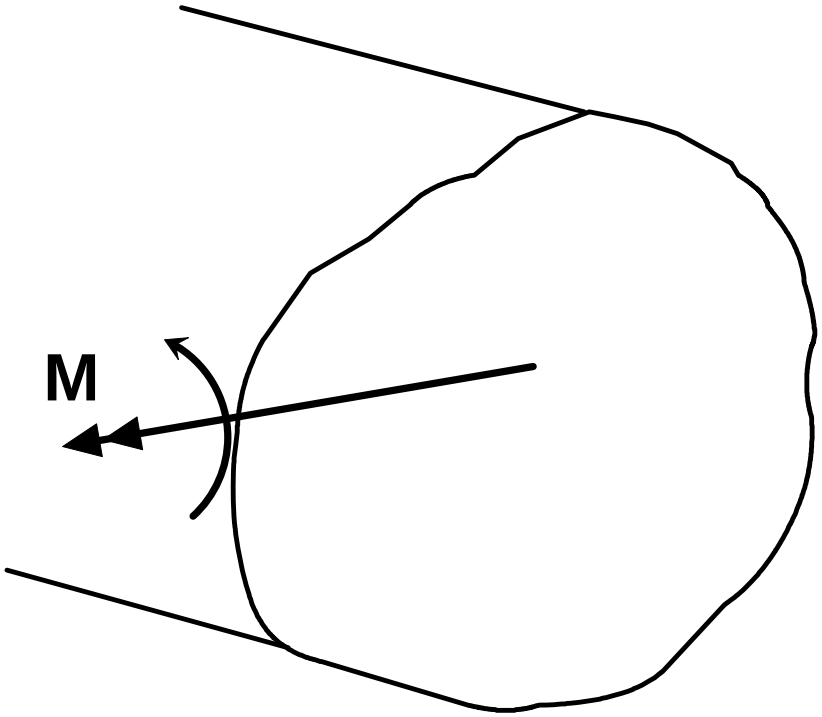
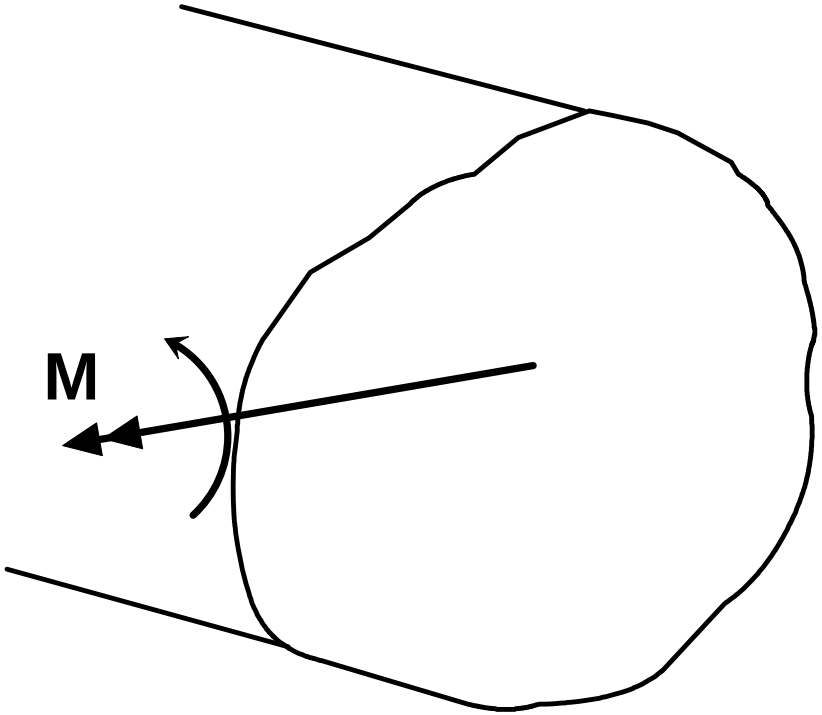
FLEXIÓN



FLEXIÓN PURA:

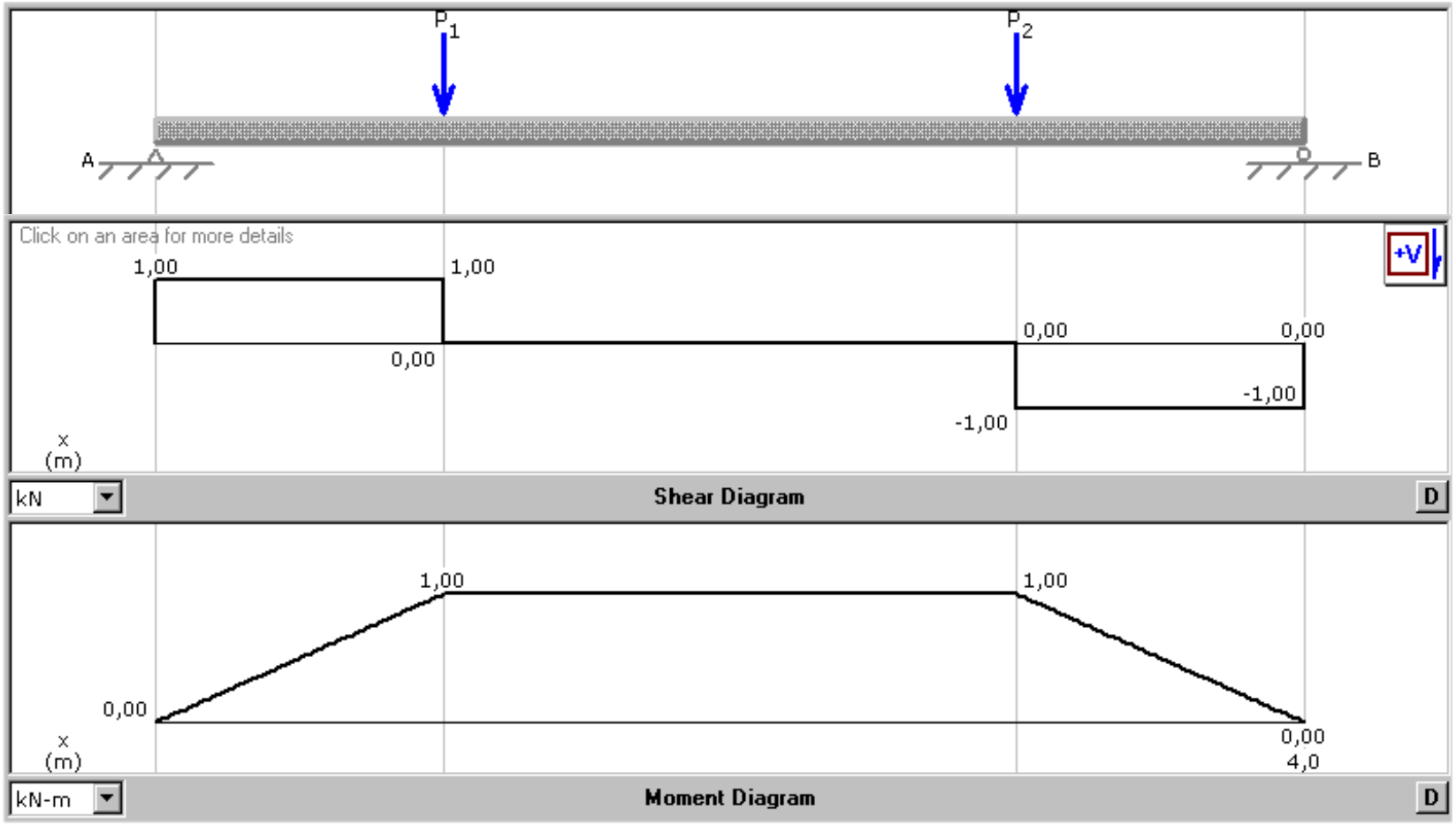
FLEXIÓN SIMÉTRICA:



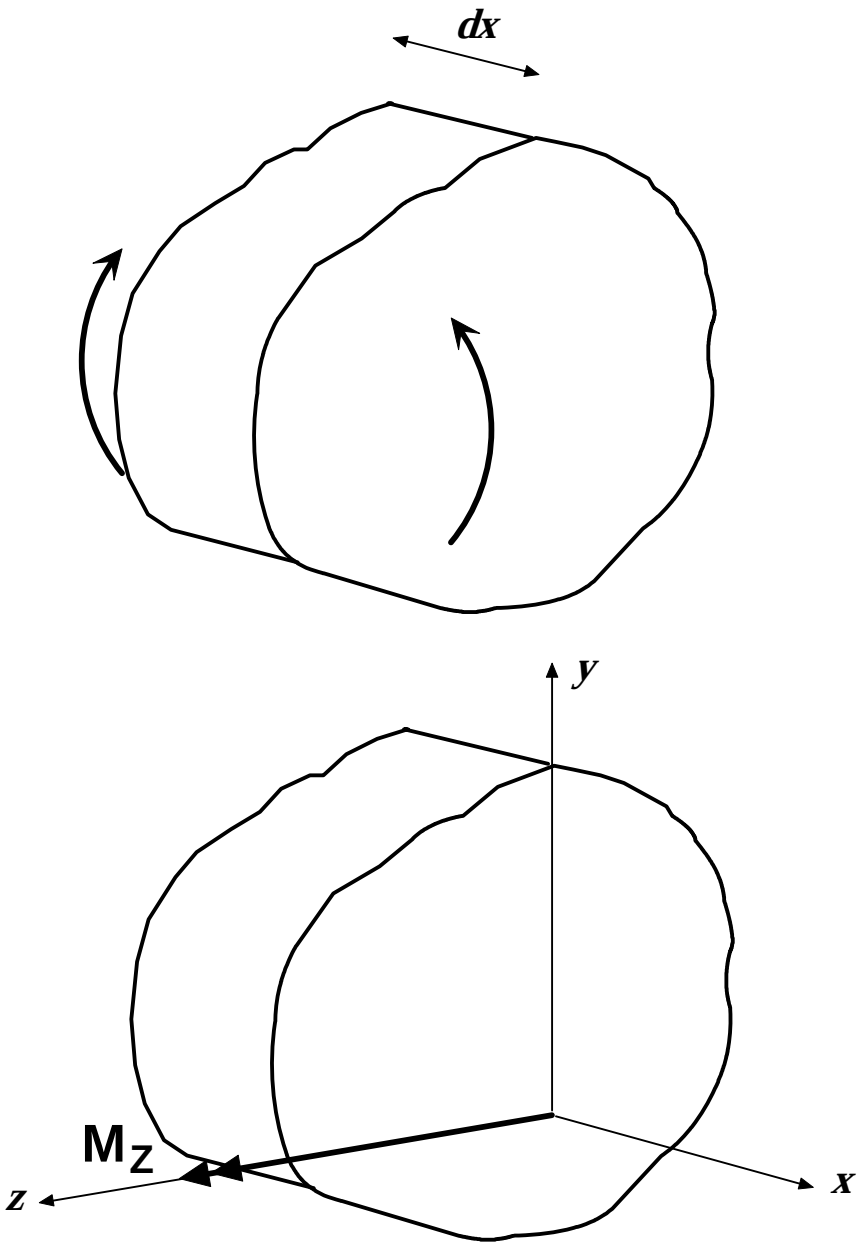
FLEXIÓN SIMÉTRICA PURA:

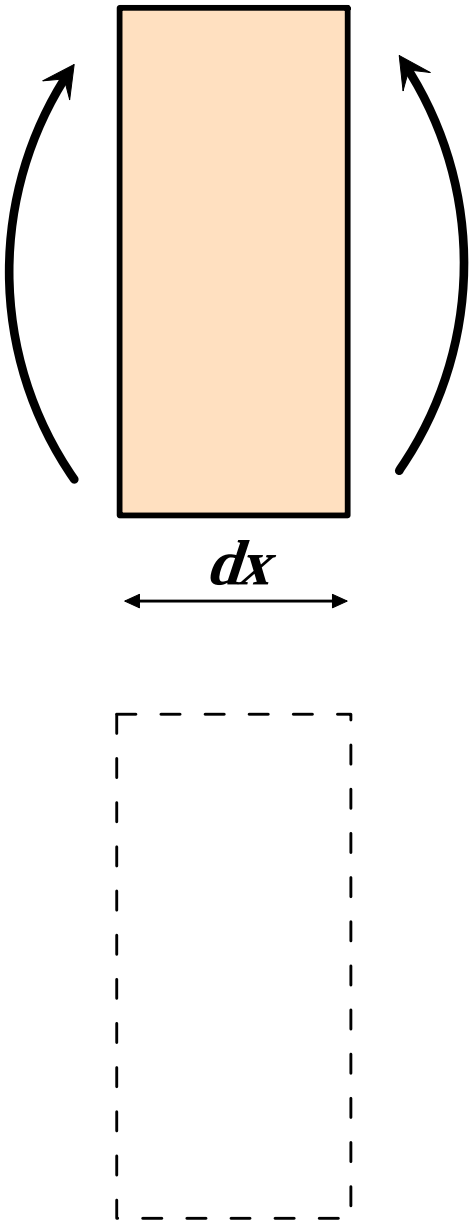
- M igual en todas las secciones
- El eje de giro es el de M

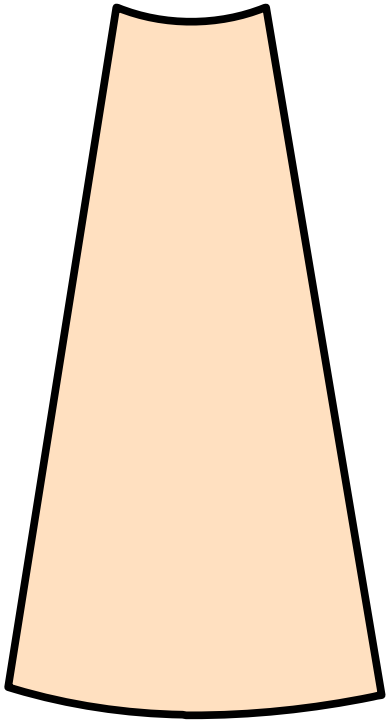
Solo se produce en secciones simétricas sometidas a:



FLEXIÓN SIMÉTRICA PURA:







$$\frac{(\rho - y)}{\rho} = 1 + \varepsilon_x$$

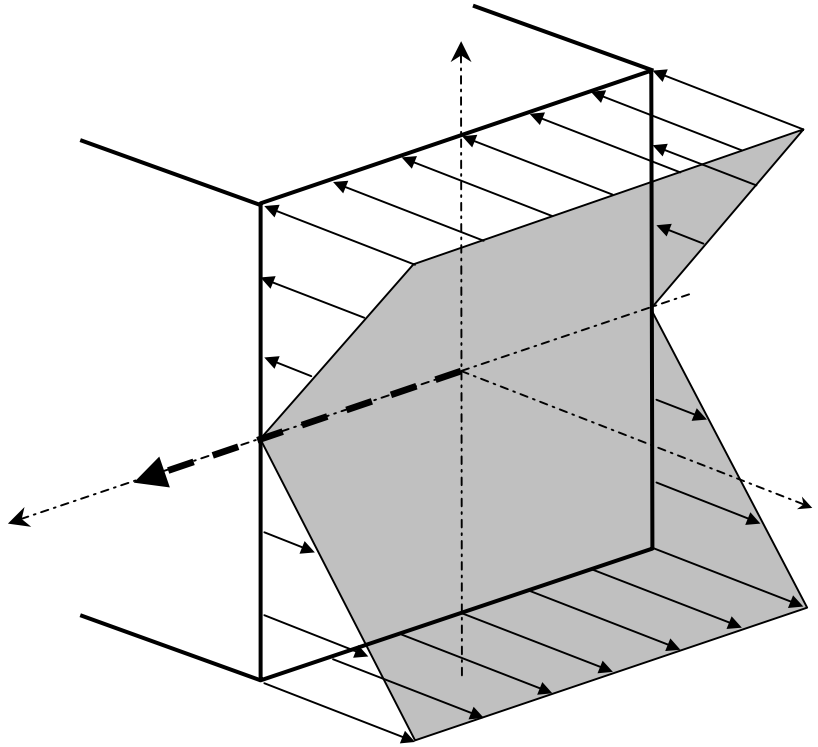
$$\longrightarrow \quad \sigma_{nx} = \frac{-E}{\rho} y$$

Equilibrio:

$$\sum Fx = 0 \quad \rightarrow \quad \iint_A \sigma_{nx} dA = 0 \quad \rightarrow$$

$$\sum M_{(Z)} = M_z \quad \rightarrow \iint_A -\sigma_{nx} \cdot y \cdot dA = M_z \quad \rightarrow$$

$$M_z = \frac{EI_Z}{\rho} \rightarrow \quad \boxed{\frac{1}{\rho} = \frac{M_z}{EI_Z}} \rightarrow \boxed{\sigma_{nx} = -\frac{M_z}{I_Z} y}$$



$$\sum M_{(y)} = 0 \quad \rightarrow \quad \iint_A \sigma_{nx} \cdot z \cdot dA = 0 \quad \rightarrow \quad \frac{-E}{\rho} \iint_A yz dA = 0$$

y, z son ejes principales de inercia.