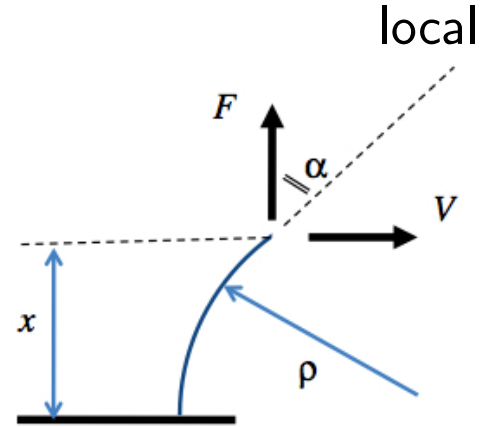


Fiber bending : $\rightarrow$ *Global Deformation*

Energy balance

$$\triangleright U_{elastic} = \alpha^2 \frac{EI}{2L}$$



$$U_{elastic} = U_F + U_V$$

$\rho = \frac{L}{\alpha}$ and $x = L \frac{\sin \alpha}{\alpha}$

$$\triangleright U_F = F(\alpha, h_{ref}) \frac{L}{\alpha} \sin(\alpha)$$

$$\triangleright U_V = V(\alpha, h_{ref}) \frac{L}{\alpha} \{1 - \cos(\alpha)\}$$