



Método 1: Compatibilidad geométrica



$$\text{Equilibrio de momentos en C} \Rightarrow N_{AB} = N_{DE} = N$$

$$\text{Compatibilidad geométrica} \Rightarrow \delta_{AB} = -\delta_{DE}$$

$$\delta_{AB} = \frac{N_{AB} \cdot b}{EA} + \alpha \theta b, \quad \delta_{DE} = \frac{N_{DE} \cdot b}{EA}$$

$$\delta_{AB} = -\delta_{DE} \Rightarrow \alpha \theta b = -\frac{2 N b}{EA}, \quad N = -\alpha \theta \frac{EA}{2}$$

$$\delta_{DE} = -\frac{\alpha \theta b}{2}$$

Método 2: Castigliano

$$U = U_{AB} + U_{DE}, \quad U_{AB} = \frac{N^2 b}{2EA} + N \alpha \theta b, \quad U_{DE} = \frac{N^2 b}{2EA}$$

$$0 = \frac{\partial U}{\partial N} = \frac{N b}{EA} + \alpha \theta b + \frac{N b}{EA} \Rightarrow N = -\alpha \theta \frac{EA}{2}$$

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