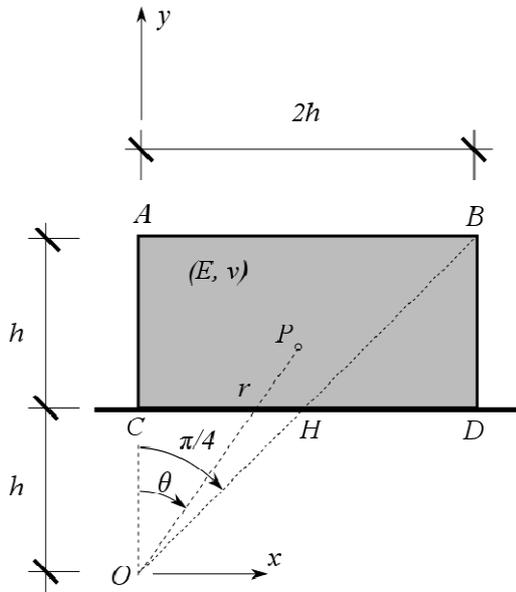


Sintesi della soluzione della prova scritta del 5 luglio 2014 – Parte II



$$\sigma_r = \frac{a}{r}, \quad \sigma_\theta = \tau_{r\theta} = 0, \quad \text{per } 0 \leq \theta \leq \pi/4,$$

$$\sigma_r = \sigma_\theta = \tau_{r\theta} = 0, \quad \text{per } \theta > \pi/4,$$

$$1) \quad AC) \quad \mathbf{n} = (0 \quad -1)^T, \quad \mathbf{T} = \begin{pmatrix} \sigma_r & 0 \\ 0 & 0 \end{pmatrix}, \quad \mathbf{T}\mathbf{n} = \mathbf{0};$$

$$BD) \quad \mathbf{T} = \mathbf{0}.$$

$$2) \quad p_x = \sigma_r \sin \theta \cos \theta = \frac{a}{2h} \sin \theta \cos^2 \theta,$$

$$p_y = \sigma_r \cos^2 \theta = \frac{a}{2h} \cos^3 \theta.$$

$$3) \quad R_x = \int_0^{2h} p_x dx = a \int_0^{\pi/4} \sin \theta d\theta = a \left( 1 - \frac{\sqrt{2}}{2} \right),$$

$$R_y = \int_0^{2h} p_y dx = a \int_0^{\pi/4} \cos \theta d\theta = \frac{a\sqrt{2}}{2}.$$

$$4) \quad \varepsilon_r = \frac{a}{Er}, \quad \varepsilon_\theta = -\frac{\nu a}{Er}, \quad \gamma_{r\theta} = 0 \quad \text{per } 0 \leq \theta \leq \pi/4;$$

$$\varepsilon_r = \varepsilon_\theta = \gamma_{r\theta} = 0 \quad \text{per } \theta > \pi/4.$$

$$\Delta_{BD} = 0, \quad \Delta_{AC} = \frac{a}{E} \ln 2.$$

$$5) \quad a < h\sigma_0.$$