

NAPREZANJE U RAVNI U POLARNIM KOORDINATAMA

$$Nr = \frac{1}{r^2} \frac{d^2 F}{dj^2} + \frac{1}{r} \frac{dF}{dr};$$

$$N_j = \frac{d^2 F}{dr^2};$$

$$N_{rj} = \frac{1}{r^2} \frac{dF}{dj} - \frac{1}{r} \frac{d^2 F}{drdj}$$

ROTACIONO SIMETRICNO OPTERECENJE:

$$Nr = \frac{1}{r} \frac{dF}{dr}; Nr = A \frac{1}{r^2} + 2B + C(1 + 2 \ln r); e_r = \frac{du}{dr}$$

$$N_j = \frac{d^2 F}{dr^2}; N_j = -A \frac{1}{r^2} + 2B + C(3 + 2 \ln r); e_j = \frac{u}{r}$$

$$N_{rj} = 0; g_{rj} = 0$$

$$F = D + A \ln r + B r^2 + C r^2 \ln r \quad D=0 \text{ (ne utice na naprezanje)}$$

$$C=0 \text{ (za kružni prsten uz uslov kompatibilnosti)}$$

$$e_r = e_j + r \frac{de_j}{dr}$$

$$A \text{ i } C=0 \text{ za ploče koje 'imaju centar'}$$

Uticaji od temperature:

$$U = \epsilon \phi \cdot r \quad e_j = \frac{1}{Eh} (N_j - u N_r) + \alpha t \cdot t \quad \text{ulazi u prelazne uslove } (U^I = U^{II})_{\text{npr.}}$$

$$-M = \int_a^b \left[-A \cdot \frac{1}{r^2} + 2B + C(3 + 2 \ln r) \right] \cdot r dr = -1 \ln \frac{b}{a} + (B + C)(b^2 - a^2) + C(b^2 \ln b - a^2 \ln a)$$