

## MEMBRANSKA TEORIJA LJUSKI ROTACIONO SIMETRICNO OPTERECENJE:

$$(1) \frac{dN_q}{dq} R_1 + \frac{d}{dj} (N_{jq} R_0) + N_{jq} R_1 \cos j + X R_0 R_1 = 0$$

$$(2) \frac{d}{dj} (N_j R_0) + \frac{dN_{jq}}{dq} R_1 - N_q R_1 \cos j + Y R_0 R_1 = 0 \quad \text{PROIZVOLJNI OPT.}$$

$$(3) \frac{N_j}{R_1} + \frac{N_q}{R_2} + Z = 0$$

-rotaciono simetricno opterećenje-

$$X \equiv 0; Y, Z = f(j); N_{jq} = 0$$

### SFERA

$$P(j) = \int_0^j (Z \cos j + Y \sin j) R_1 \cdot R_0 \cdot 2p \cdot dj$$

$$N_j = -\frac{P(j)}{2pR_0 \sin j}$$

$$N_q = -\left( \frac{N_j}{R_1} + Z \right) \cdot R_2$$

### KONUS

$$P(z) = 2p \frac{\operatorname{tg} a}{\cos a} \int_0^z (Z \sin a + Y \cos a) \cdot z \cdot dz$$

$$N_j = -\frac{P(z)}{2pR_0 \cos a}$$

$\alpha$  – ugao u „vrhu“ konusa

$$N_q = -\left( \frac{N_j}{R_1} + Z \right) \cdot R_2$$

# ROTACIONO SIMETRICNA DEFORMACIJA ROTACIONO SIMETRICNE LJUSKE

$$e_j = \frac{1}{Eh} (N_j - uN_q) = \frac{1}{R1} \left( \frac{dv}{dj} - w \right)$$

$$e_q = \frac{1}{Eh} (N_q - uN_j) = \frac{dRo}{Ro} = \frac{1}{R2} (v \cdot ctgj - w)$$

$$c = \frac{1}{R1} \left( v + \frac{dw}{dj} \right)$$

$$v = \left\{ \int \frac{1}{Eh} [N_j \cdot R1 + uR2 - N_q \cdot R2 + uR1] \frac{dj}{\sin j} + C \right\} \cdot \sin j$$