

Obciążenie siłą skupioną  $Q$  w osi symetrii (rys. 4.63b):

$$M_{\varphi=0} = 0,5Qr \frac{(\eta-1)(\cos 2\alpha - 1) + 4\eta(1 - \cos \alpha)}{2\alpha(\eta+1) - (\eta-1)\sin 2\alpha}; \quad (4.52)$$

dla  $\eta = 1$

$$M_{\varphi=0} = Qr \frac{1 - \cos \alpha}{2\alpha}, \quad (4.53)$$

$$M_{\varphi} = M_{\varphi=0} \cos \varphi - 0,5Qr \sin \varphi, \quad (4.54)$$

$$T_{\varphi} = M_{\varphi=0} \sin \varphi - 0,5Qr(1 - \cos \varphi); \quad (4.55)$$

dla  $\alpha = 90^\circ$

$$M_{\varphi=0} = +0,318Qr, \quad M_A = M_B = -0,5Qr, \quad T_A = T_B = -0,182Qr.$$

Obciążenie dwiema siłami skupionymi  $Q$  (rys. 4.63c):

$$M_{\varphi=0} = Qr \frac{K}{2\alpha(\eta+1) - \sin 2\alpha(\eta-1)}, \quad (4.56)$$

gdzie  $K = (\eta-1) [\cos \beta (\cos 2\alpha - \cos 2\beta) + \sin \beta \sin 2\beta] + 2(\eta+1) (\beta-\alpha) \sin \beta + 4\eta(\cos \beta - \cos \alpha);$

dla  $\eta = 1$

$$M_{\varphi=0} = Qr \frac{\cos \beta - \cos \alpha - (\alpha - \beta) \sin \beta}{\alpha}. \quad (4.57)$$

Jeżeli  $\varphi < \beta$ , to

$$M_{\varphi} = M_{\varphi=0} \cos \varphi, \quad (4.58)$$

$$T_{\varphi} = M_{\varphi=0} \sin \varphi. \quad (4.59)$$

Jeżeli  $\beta < \varphi < \alpha$ , to

$$M_{\varphi} = M_{\varphi=0} \cos \varphi - Qr \sin(\varphi - \beta), \quad (4.60)$$

$$T_{\varphi} = M_{\varphi=0} \sin \varphi - Qr[1 - \cos(\varphi - \beta)]; \quad (4.61)$$

dla  $\alpha = 90^\circ, \beta = 45^\circ, \eta = 1$

$$M_{\varphi=0} = +0,097Qr, \quad M_A = M_B = -0,707Qr, \quad T_A = T_B = -0,20Qr.$$