

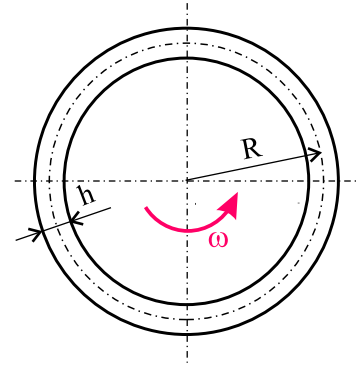
Problem 413

Calculate the stress in the thin ring rotating with the speed of 4000 rpm. The ring is made of copper ($\rho_1 = 8,9 \cdot 10^3 \text{ kgm}^{-3}$, $E_1 = 1,2 \cdot 10^5 \text{ MPa}$). Calculate also the radius change ΔR due to rotation.

Input values:

$$R = 200 \text{ mm}, \quad h = 6 \text{ mm}$$

$$\omega = 4000 \text{ rpm}.$$



tension

curvature of the centreline