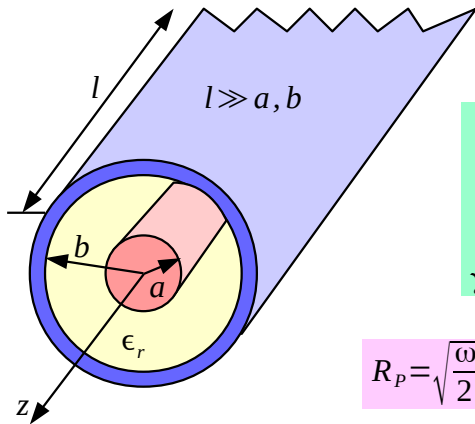


Slabljenje koaksialnega kabla



$$\begin{aligned} a &= 2 \text{ mm} \\ b &= 7 \text{ mm} \\ \epsilon_r &= 2.2 \\ f &= 100 \text{ MHz} \\ \gamma &= 56 \cdot 10^6 \text{ S/m} \end{aligned}$$

$$\delta = \sqrt{\frac{2}{\omega \mu \gamma}} \approx 6.73 \mu\text{m} \ll a, b$$

$$R_p = \sqrt{\frac{\omega \mu}{2 \gamma}} \approx 2.66 \text{ m}\Omega$$

$$R/l = \frac{R_p}{2\pi a} + \frac{R_p}{2\pi b} = \frac{R_p}{2\pi} \left(\frac{1}{a} + \frac{1}{b} \right) \approx 0.272 \Omega/\text{m}$$

$$Z_K = \frac{Z_0}{2\pi \sqrt{\epsilon_r}} \ln\left(\frac{b}{a}\right) \approx \frac{60 \Omega}{\sqrt{\epsilon_r}} \ln\left(\frac{b}{a}\right) \approx 50.7 \Omega$$

$$\alpha = \frac{R/l}{2 Z_K} \approx 2.68 \cdot 10^{-3} \text{ Np/m}$$

$$a_{\text{dB}}/l = \frac{20}{\ln 10} \cdot \alpha \approx 0.0233 \text{ dB/m} = 23.3 \text{ dB/km}$$

