

$$I(z) = I_0 \cdot \cos kz \quad |\vec{H}| = \frac{I_0 \cdot \cos kz}{2\pi \cdot \rho} \quad R_p = \frac{1}{\gamma \delta} = \sqrt{\frac{\omega \mu_0}{2\gamma}}$$

$$W = \frac{1}{2} \cdot \int_{r_{zila}}^{r_{oklop}} \int_0^{2\pi} \int_0^{\lambda/4} \mu_0 |\vec{H}|^2 \rho d\rho d\phi dz = \frac{\mu_0 |I_0|^2 \lambda}{32\pi} \cdot \ln \frac{r_{oklop}}{r_{zila}}$$

$$P_{zila} = \frac{1}{2} \cdot \int_0^{\lambda/4} \frac{|I_0|^2 R_p \cos^2 kz}{2\pi r_{zila}} dz = \frac{|I_0|^2 R_p \lambda}{32\pi r_{zila}}$$

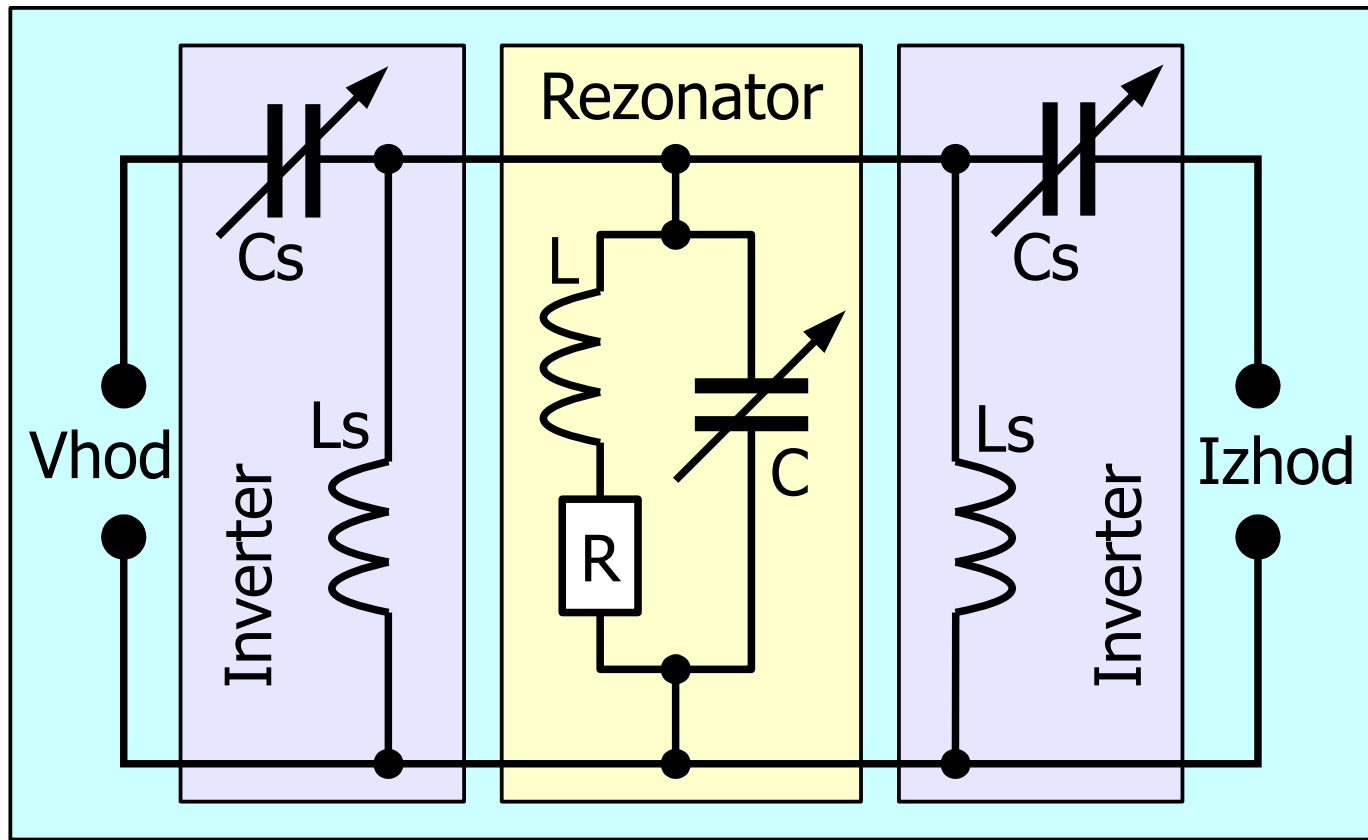
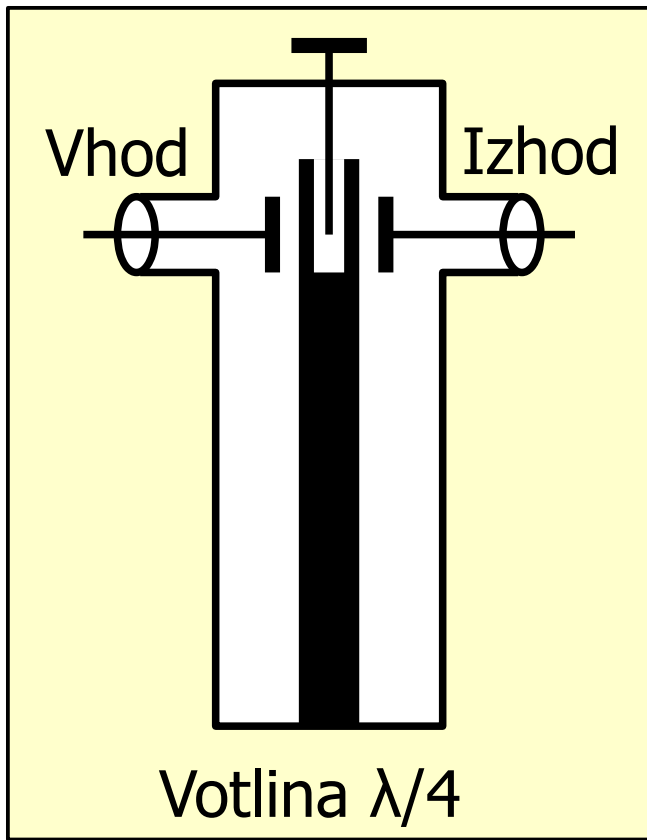
$$P_{dno} = \frac{1}{2} \cdot \int_{r_{zila}}^{r_{oklop}} \frac{|I_0|^2 R_p}{2\pi \rho} d\rho = \frac{|I_0|^2 R_p}{4\pi} \cdot \ln \frac{r_{oklop}}{r_{zila}}$$

$$P_{oklop} = \frac{|I_0|^2 R_p \lambda}{32\pi r_{oklop}}$$

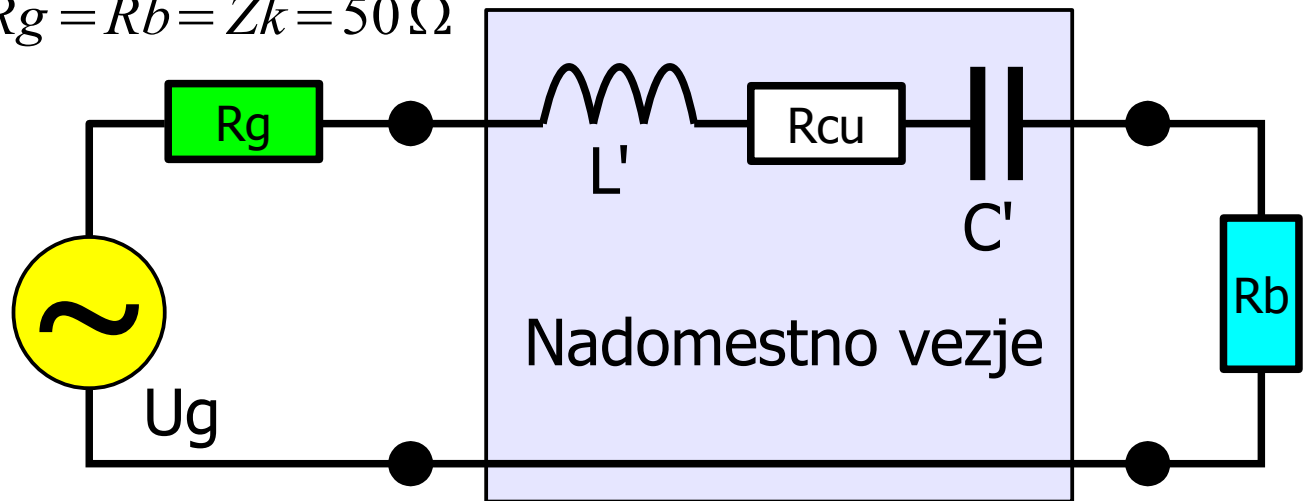
$$Q = \omega \cdot \frac{W}{P_{zila} + P_{dno} + P_{oklop}}$$

$$Q = \frac{\sqrt{\frac{4\pi c_0 \mu_0 \gamma}{\lambda}} \cdot \ln \frac{r_{oklop}}{r_{zila}}}{\frac{1}{r_{zila}} + \frac{8}{\lambda} \cdot \ln \frac{r_{oklop}}{r_{zila}} + \frac{1}{r_{oklop}}}$$

Kvaliteta četrtvalovnega rezonatorja



$R_g = R_b = Z_k = 50 \Omega$



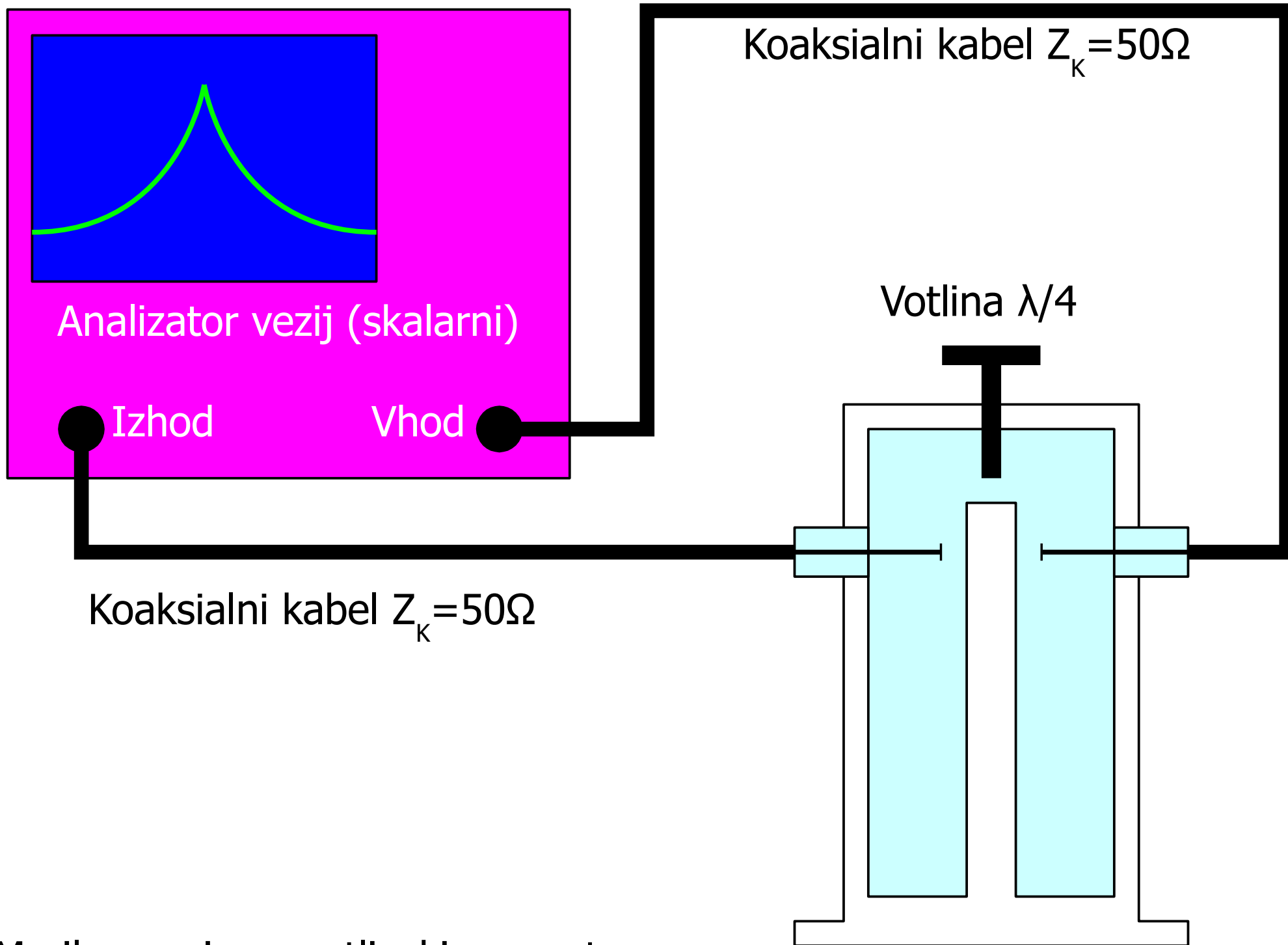
$$S_{11} = S_{22} = \frac{R_{cu}}{R_{cu} + 2 \cdot Z_k}$$

$$S_{21} = S_{12} = \frac{2 \cdot Z_k}{R_{cu} + 2 \cdot Z_k}$$

$$Q_U = \frac{\omega \cdot L'}{R_{cu}}$$

$$Q_L = \frac{\omega \cdot L'}{R_{cu} + 2 \cdot Z_k}$$

Vstavitveno slabljenje rezonatorja



Merilno vezje za votlinski rezonator