

$$dQ = dQ$$

- str. 3 prezentace

$C dU = -dI dt$ - pokles proudu kvůli nabíjení C

$$C_0 dx dU = -dI dt$$

$$\frac{C_0 \partial U}{\partial A} = - \frac{\partial I}{\partial x}$$

$$\frac{\partial U}{\partial x} = -L_0 \frac{\partial I}{\partial A}$$

- str. 4 prezentace

(1)

$$-\frac{\partial I}{\partial x} = C_0 \frac{\partial U}{\partial A}$$

(2)

$$\text{- z (1): } -\partial I = \frac{\partial U}{\partial x} \cdot \frac{\partial A}{L_0} \text{ - dosadíme do (2):}$$

$$\frac{\partial^2 U}{\partial x^2} \cdot \frac{\partial A}{L_0} = C_0 \frac{\partial U}{\partial A}$$

$$\frac{\partial^2 U}{\partial x^2} = L_0 C_0 \frac{\partial^2 U}{\partial A^2}$$

$$\text{- z (2): } \partial U = -\frac{\partial I}{\partial x} \cdot \frac{\partial A}{C_0} \text{ - dosadíme do (1):}$$

$$-\frac{\partial^2 I}{\partial x^2} \cdot \frac{\partial A}{C_0} = -L_0 \frac{\partial I}{\partial A}$$

$$\frac{\partial^2 I}{\partial x^2} = L_0 C_0 \frac{\partial^2 I}{\partial A^2}$$

$$Z = Z_1 + \frac{Z_2 Z_0}{Z_2 + Z_0} = Z_0$$

- str. 8 prezentace

$$Z_1(Z_2 + Z_0) + Z_2 Z_0 = Z_0(Z_2 + Z_0)$$

$$Z_1 Z_2 + Z_0 Z_1 + Z_0 Z_2 = Z_0 Z_2 + Z_0^2$$

$$Z_0^2 - Z_0 Z_1 - Z_1 Z_2 = 0 \quad D = Z_1^2 + 4Z_1 Z_2$$

$$Z_{0,2} = \frac{Z_1 \pm \sqrt{Z_1^2 + 4Z_1 Z_2}}{2} =$$

$$= \frac{Z_1}{2} \pm \frac{Z_1 \sqrt{1 + 4 \frac{Z_2}{Z_1}}}{2} = \left(\frac{Z_1}{2} \left(1 \pm \sqrt{1 + 4 \frac{Z_2}{Z_1}} \right) \right) \text{ ebd.}$$

↓ pouze „+“

- str. 10-11 prezentace

$$\frac{\partial U}{\partial x} = -L_0 \frac{\partial I}{\partial t} + R_0 I = \underline{(R_0 + i\omega L_0)I} - \text{derivace podle } x =$$

$$\frac{\partial^2 U}{\partial x^2} = (R_0 + i\omega L_0) \left(\frac{\partial I}{\partial x} \right) = (R_0 + i\omega L_0) (G_0 + i\omega C_0) U$$

$$\frac{\partial I}{\partial x} = -C_0 \frac{\partial U}{\partial t} + G_0 U = \underline{(G_0 + i\omega C_0)U} - \text{deriv. podle } x =$$

$$\frac{\partial^2 I}{\partial x^2} = (G_0 + i\omega C_0) \left(\frac{\partial U}{\partial x} \right) = (G_0 + i\omega C_0) (R_0 + i\omega L_0) I$$