

$$Z_1 = j\omega L + \frac{Z_2 \cdot \frac{1}{j\omega C} e}{Z_2 + \frac{1}{j\omega C} e}$$

Linea lunga $Z_1 = Z_2$
no spuntato

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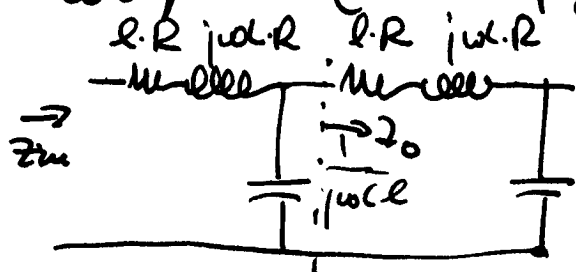
$$Z_1^2 - Z_1 j\omega L e - \frac{j\omega L}{j\omega C}$$

$$Z_1^2 - j\omega L e \cdot Z_1 = \frac{L}{C}$$

↳ Linea piccola soluzione

$$Z_1 = \sqrt{\frac{L}{C}}$$

• Con perdite (calcola pag. 16).



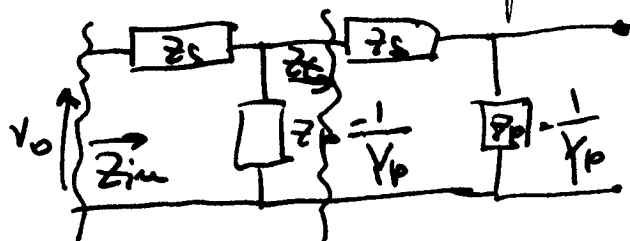
$$Z_{in} = R + j\omega L + \frac{Z_0 \cdot \frac{1}{j\omega C} e}{Z_0 + \frac{1}{j\omega C} e} = Z_0$$

$$Z_0^2 + Z_0 (R + j\omega L) \cdot e = \frac{R + j\omega L}{j\omega C}$$

per una soluzione (e piccolo) $Z_0 = \sqrt{\frac{R + j\omega L}{j\omega C}} = \left[\frac{L}{C} \left(1 + \frac{R}{j\omega L} \right) \right]^{1/2}$

per R piccolo espandendo: $Z_0 = \sqrt{\frac{L}{C}} \left(1 - j \frac{R}{2\omega L} \right)$

per un generale



$$\text{con } Z_s = (R + j\omega L) \cdot e$$

$$Z_p = (G + j\omega C) e = \frac{1}{Z_p}$$

Linea ∞ $Z_{in} = Z_0$