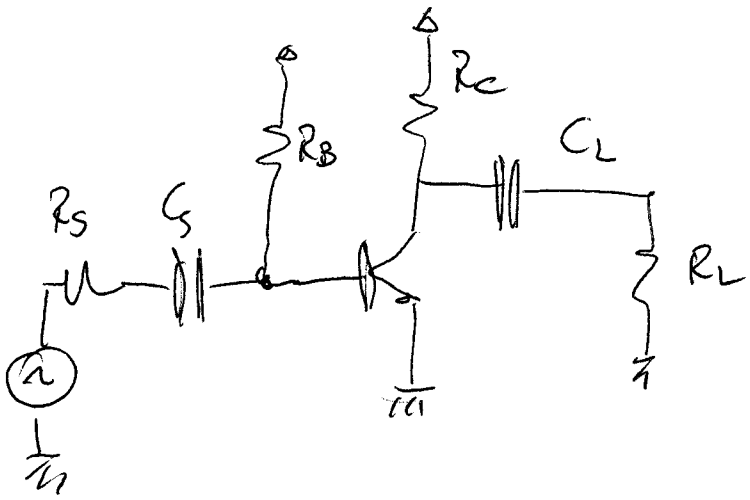
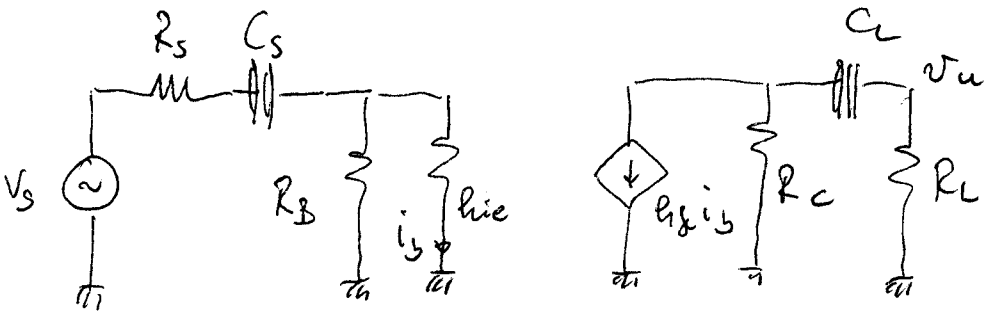
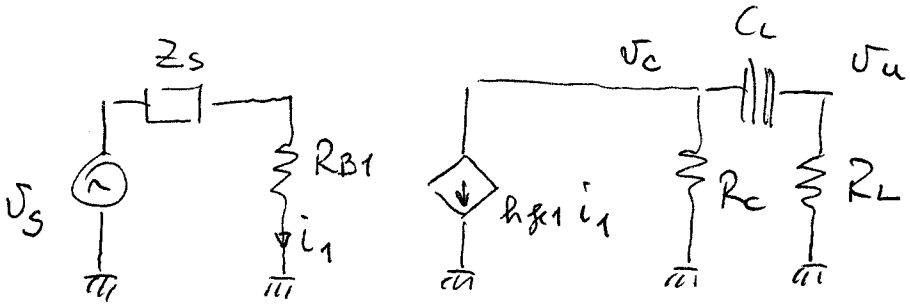
AMPLIFICATORE A EMETTITORE COMUNE



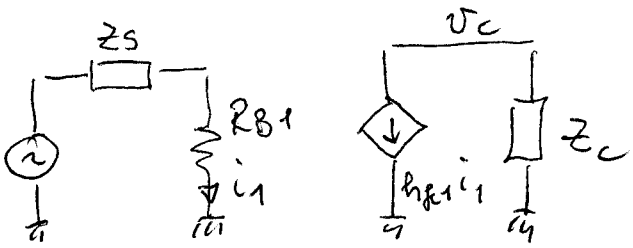


$$R_{B1} = R_B // h_{ie}$$

$$h_{fe1} = h_{fe} \frac{R_{B1}}{h_{ie}}$$



$$v_u = \frac{R_L C_L s}{1 + R_L C_L s} v_c$$



$$Z_c = \frac{R_c (1 + R_L C_L s)}{(R_c + R_L) C_L s + 1}$$

$$Z_S = R_S + \frac{1}{C_S s}$$

$$v_c = - h_{fe1} Z_c i_1$$

$$i_1 = \frac{v_s}{Z_S + R_{B1}} = v_s \frac{C_S s}{(R_S + R_{B1}) C_S s + 1}$$

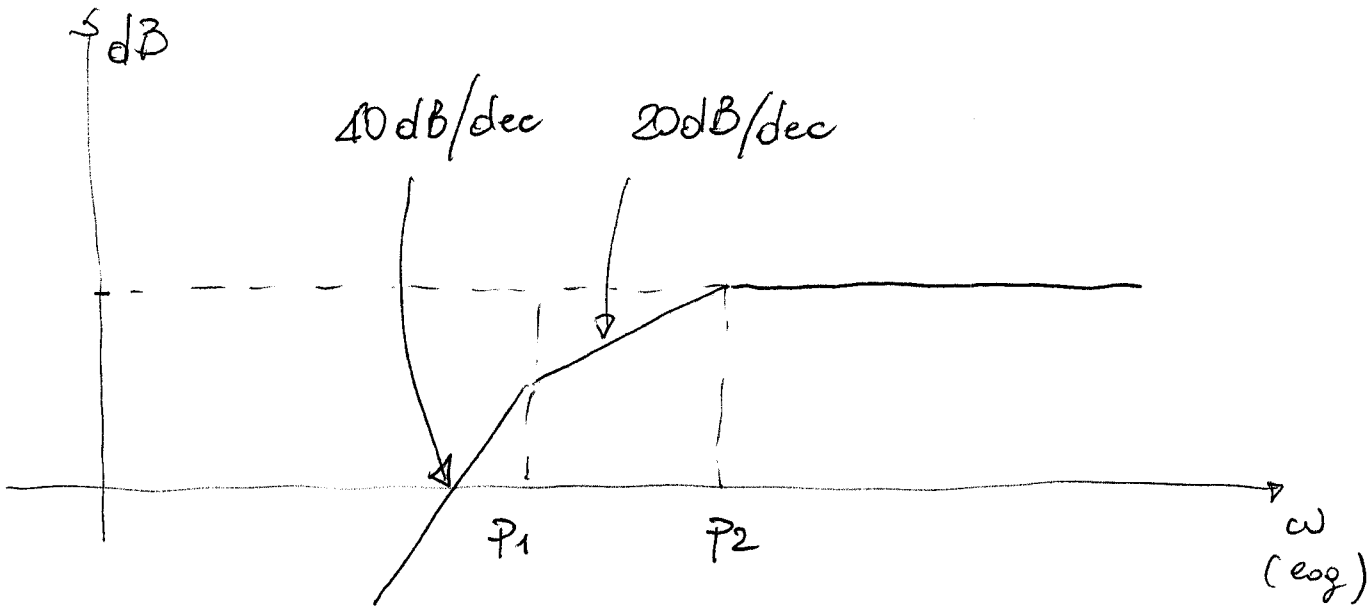
Quindi la funzione di trasferimento è

$$v_u = \frac{-R_L C_L s}{1+\cancel{R_L C_L s}} \cdot \frac{h_{fe1} R_C (1+\cancel{R_L C_L s})}{(R_C+R_L)C_L s + 1} \cdot \frac{C_S s}{(R_S+R_{B1})C_S s + 1} v_S =$$

$$= - \frac{s^2 \, h_{fe1} R_L C_L R_C C_S}{\{(R_C+R_L)C_L s + 1\}\{(R_S+R_{B1})C_S s + 1\}}$$

Due zeri nell'origine

Due poli in $\frac{1}{(R_C+R_L)C_L}$; $\frac{1}{(R_S+R_{B1})C_S}$

Per frequenze $\omega \to \infty$ si ha il valore dell'amplif. a centro banda

$$v_u \simeq - h_{fe1} \frac{R_L C_L R_C C_S}{(R_C+R_L)C_L (R_S+R_{B1})C_S} = - h_{fe} \frac{R_L R_C R_{B1}}{(R_C+R_L)(R_S+R_{B1}) h_{ie}}$$