Exercice 3.1. Montage Base-Commune :

$$h_{11b} = \frac{h_{11c}}{h_{21c}+1} = \frac{1,75}{50} = 35\,\Omega$$

$$h_{12b} = \frac{h_{11c}.h_{22c}}{h_{21c}+1} - h_{12c} = 4\times10^{-4}$$

$$h_{21b} = -\frac{h_{21c}}{h_{21c}+1} = \frac{-49}{50} = -0,98$$

$$h_{22b} = \frac{h_{22c}}{h_{21c}+1} = \frac{40\times10^{-6}}{50} = 8\times10^{-7}$$

$$\Delta h = h_{11}.h_{22} - h_{12}.h_{21} = 35\times8\times10^{-7} + 0,98\times4\times10^{-4} = 4,2\times10^{-4}$$

$$R_g = \frac{h_{11} + R_c.\Delta h}{1 + R_c.h_{22}}$$

$$R_c = \frac{h_{11} + R_g}{\Delta h + h_{22}.R_g}$$

- pour adapter il faut réaliser ces deux conditions.
- 2 équations, 2 inconnues.

La résolution donne :

$$R_g = \sqrt{\frac{h_{11}.\Delta h}{h_{22}}} = 330\,k\Omega \text{ ou } 136\,\Omega$$

$$R_c = \sqrt{\frac{h_{11}}{h_{22}.\Delta h}} = \sqrt{\frac{35}{0,8\times10^{-6}.420\times10^{-6}}} = 10^6\sqrt{\frac{35}{8\times42}} = 10^6.0,32$$

$R_c = 320\,k\Omega$.

$$G_i = \frac{h_{21}}{1 + h_{22}.R_c} = \frac{-0,98}{1 + 8\times10^{-7}.333.10^3} = -0,78.$$

$g_i = -2,2$ db.

$$G_u = -\frac{h_{21}.R_c}{h_{11}\Delta h + \Delta h.R_c} = 1900 \qquad g_u = 66\text{ db}.$$

$G_p \# 1500$ $\quad g_p = 10\log 1500 = 10\times3,175 = 31,75$ db.