Exemple 1 :

$$rb = \frac{\omega_{3/5}}{\omega_{0/5}} = \frac{Z_{24}}{Z_{10}} \cdot \frac{Z_6}{Z_{31}} \cdot (-1)^2 = \frac{Z_{24} \cdot Z_6}{Z_{10} \cdot Z_{31}} = 1,17$$

$$k = \frac{\omega_{3/0}}{\omega_{5/0}} \quad \text{avec} \quad rb = \frac{\omega_{3/0} - \omega_{5/0}}{-\omega_{5/0}}$$

$$-rb \cdot \omega_{5/0} = \omega_{3/0} - \omega_{5/0}$$

$$\omega_{5/0}(1 - rb) = \omega_{3/0} \Rightarrow \frac{\omega_{3/0}}{\omega_{5/0}} = 1 - rb = \underline{-0,17}$$

Exemple 2 :

étage 1 : on fixe 3 $\Rightarrow rb = \frac{\omega_{0/3}}{\omega_{1/3}} = (-1)^1 \cdot \frac{Z_1}{Z_2} \cdot \frac{Z_2}{Z_{0a}}$

$$rb = -\frac{Z_1}{Z_{0a}} = -\frac{21}{123} = -0,17$$

$$k_1 = \frac{\omega_{3/0}}{\omega_{1/0}} \quad \text{et} \quad rb = \frac{-\omega_{3/0}}{\omega_{1/0} - \omega_{3/0}}$$

$$rb(\omega_{1/0} - \omega_{3/0}) = -\omega_{3/0} \Rightarrow rb\,\omega_{1/0} = \omega_{3/0}(rb - 1)$$

$$\text{soit } k_1 = \frac{\omega_{3/0}}{\omega_{1/0}} = \frac{rb}{rb - 1} = \underline{0,145}$$

Etage 2 : on fixe 5 : $n_b = \frac{\omega_{3/5}}{\omega_{0/5}} = (-1)^{\nearrow} \cdot \frac{Z_3}{Z_4} \cdot \frac{Z_4}{Z_{0b}}$

$n_b = -\frac{Z_3}{Z_{0b}} = -0,253$

$k_2 = \frac{\omega_{5/0}}{\omega_{3/0}}$ et $n_b = \frac{\omega_{3/0} - \omega_{5/0}}{-\omega_{5/0}}$

$-n_b \cdot \omega_{5/0} = \omega_{3/0} - \omega_{5/0} \Rightarrow \omega_{5/0}(1 - n_b) = \omega_{3/0}$

$k_2 = \frac{\omega_{5/0}}{\omega_{3/0}} = \frac{1}{1 - n_b} = 0,798$

Soit $k = k_1 . k_2 = \underline{-0,116}$

- codeur absolu : $p = \frac{\pi . D}{n_{es}} \Rightarrow n_{es} = \frac{\pi D}{p} = \frac{\pi . 100}{5} = 63$ pts/tr

  6 bits : $2^6 = 64$ pts/tour

- $h = 1,4$ mm $\Rightarrow n_{brtr} = \frac{h}{\pi D} = \frac{1600}{\pi . 100} = 4,1$ tours

  3 bits : $2^3 = 8$ tours

Le codeur a une résolution de 9 bits

soit 512 positions codables

- 1,13 m par cercles

$$p = \frac{\pi D}{64} = 4,91 \text{ mm}$$

$$\text{nb codes} = \frac{1130}{4,91} = \underline{230}$$

$$\underline{(230)_{10} = (011100110)_2}$$

- codeur incrémental : $p = \frac{\pi D}{res} \Rightarrow res = \frac{\pi D}{p}$

$$res = \frac{\pi \cdot 80}{2} = \underline{126 \text{ pts/tr}}$$

$$\Omega = \frac{V}{R} = \frac{2V}{D} = \frac{2 \cdot 0,1}{0,08} = 2,5 \text{ rad.s}^{-1}$$

$$n = \frac{\Omega}{2\pi} = 0,398 \text{ tr.s}^{-1} \Rightarrow f = n \times res = \underline{50 \text{ Hz}}$$

- $nb = \frac{2800}{2} = \underline{1400 \text{ créneaux}}$