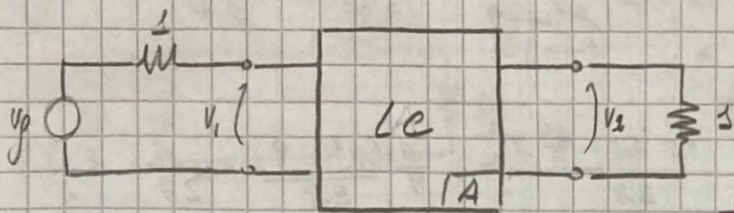


Filtro parabólico Bessel 3^{er} orden no dissipativo, normalizado en frecuencia e impedancia.



$$\omega f_{\text{p}} h(s) = \frac{1}{s} + \frac{2}{\frac{3}{s} + \frac{1}{\frac{5}{s}}}$$

$$\frac{\cosh(8)}{\sinh(8)} = \frac{1}{8} + \frac{1}{\frac{3}{8} + \frac{8}{5}}$$

$$H_B = \frac{k}{\cosh(\beta) + \sinh(\beta)}$$

$$\frac{\cos u(8)}{\sec u(8)} = \frac{1}{8} + \frac{58}{15+8^2} = \frac{8^2+15+58^2}{8(8^2+15)} = \frac{68^2+15}{8(8^2+15)}$$

$$H(8) = \frac{8^3 + 15 \cdot 8 + 6 \cdot 8^2 + 15}{8^3 + 6 \cdot 8^2 + 15 \cdot 8 + 15} = \frac{15}{15} = 1 \text{ da bei } 8=0$$

$$S_{21} = \frac{V_2}{V_{p1/2}} = 4(8)$$

$$|S_{21}|^2 + |S_{11}|^2 = 1 \rightarrow |S_{21}|^2 = S_{21}(s) S_{21}(-s)$$

$$|S_{21}|^2 = \frac{15^2}{-8^6 + 68^4 - 458^2 + 225}$$

$$|S_{11}|^2 = 1 - |S_{21}|^2$$

$$|S_{11}|^2 = \frac{1}{2} - \frac{P(|S_{21}|^2)}{Q(|S_{21}|^2)} = \frac{-8^6 + 6 \cdot 8^4 - 45 \cdot 8^2}{-8^6 + 6 \cdot 8^4 + 45 \cdot 8^2 + 225}$$

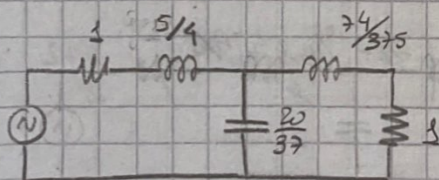
$$S_{11} = \frac{8^3 + 4,48^2 + 6,78}{8^3 + 68^2 + 158 + 15}$$

$$g_1 = \frac{1 + S_{11}}{1 - S_{11}} = \frac{Q + P}{Q - P}$$

$$x_1 = \frac{8^3 + 6 \cdot 8^2 + 15 \cdot 8 + 15 + 8^3 + 4 \cdot 4 \cdot 8^2 + 6 \cdot 7 \cdot 8}{8^3 + 6 \cdot 8^2 + 15 \cdot 8 + 15 - 8^3 - 4 \cdot 4 \cdot 8^2 - 6 \cdot 7 \cdot 8} = \frac{2 \cdot 8^3 + 10 \cdot 4 \cdot 8^2 + 21 \cdot 7 \cdot 8 + 15}{1 \cdot 6 \cdot 8^2 + 8 \cdot 3 \cdot 8 + 15}$$

$$Z_1 = \frac{5/4 \cdot 8^3 + 6,5 \cdot 8^2 + \frac{271}{160} \cdot 8 + 75}{8^2 + \frac{83}{16} \cdot 8 + \frac{75}{8}}$$

$$\frac{54x^3 + 658x^2 + 2198x + 25}{8^2 + 83/16x + 75/8} = \frac{54x^3 + 658x^2 + \frac{160}{82} \cdot \frac{925}{8}x^3}{4} \rightarrow m$$



$$\begin{array}{r} 8^2 + 83 \mid 168 + 75/8 \\ 8^2 + \frac{300}{59} 8 \end{array} \quad \begin{array}{r} 37 \ 8 + 75/8 \\ \hline 20 \ 8 \\ 37 \end{array}$$

$$\begin{array}{r} 37 \ 8 + 75/8 \mid 75/8 \\ 20 \ 8 \end{array} \quad \begin{array}{r} 74 \ 8 \\ 375 \end{array}$$

$$\begin{array}{r} 37 \ 8 + 75/8 \mid 75/8 \\ 20 \ 8 \end{array}$$

$$\begin{array}{r} 75 \ 8 \mid 75/8 \\ 8 \end{array}$$

$$\begin{array}{r} 0 \ 1 \end{array}$$

$$\frac{1}{20} = 1$$

Nota:
como se fue
los coef con
Python,
tengo esto
de aprox

Scanned with CamScanner