

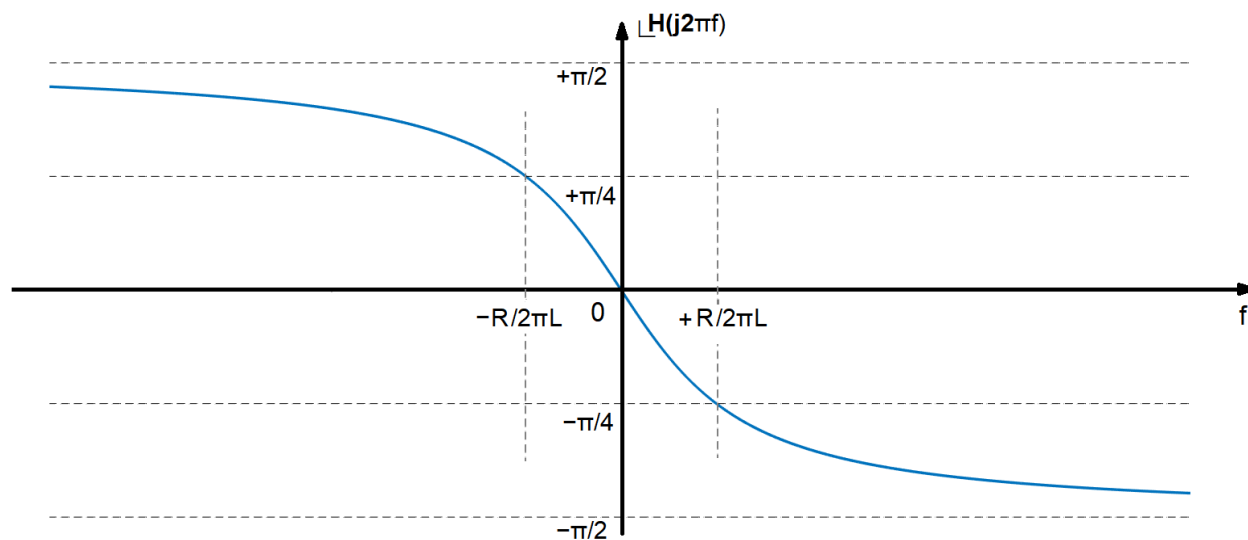
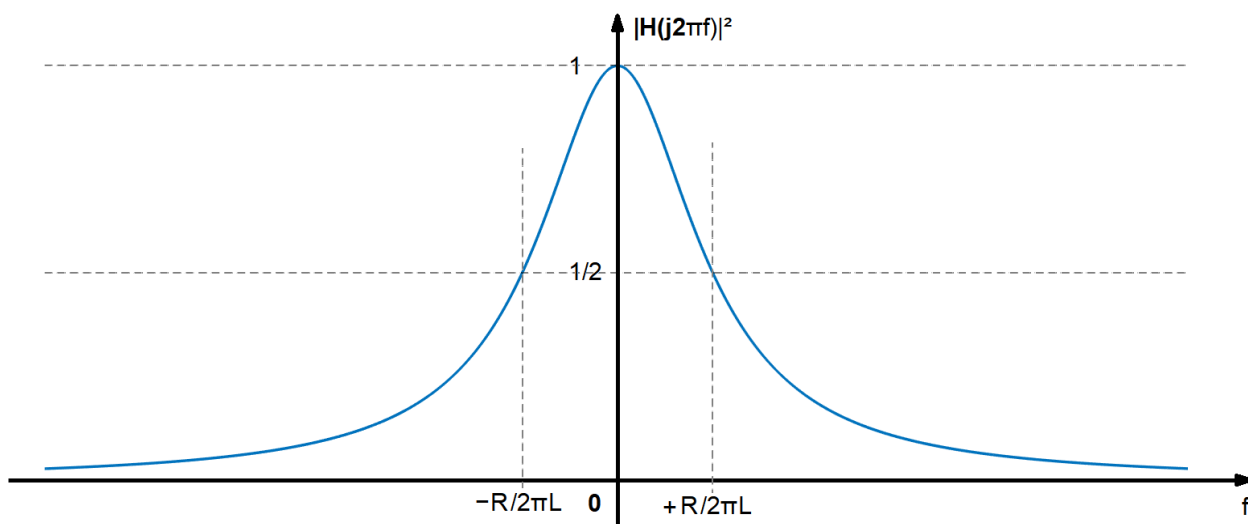
6 Sistemas de Tempo Contínuo

6.2 Exercício Proposto da Aula 15

$$H(s) = \frac{R/L}{s + R/L} \leftrightarrow h(t) = \frac{R}{L} u(t) \cdot e^{-tR/L}$$

6.4 Exercício Proposto da Aula 16

$$|H(j2\pi f)| = \frac{R/L}{\sqrt{(2\pi f)^2 + R/L}} \quad \text{e} \quad \angle H(j2\pi f) = -\arctan\left(\frac{2\pi fL}{R}\right)$$



6.6 Exercício Proposto da Aula 17

$$H(s) = \frac{sR/L}{s^2 + sR/L + 1/LC}$$

$$s \begin{bmatrix} Q_1(s) \\ Q_2(s) \end{bmatrix} = \begin{bmatrix} 0 & -1/LC \\ 1 & -R/L \end{bmatrix} \begin{bmatrix} Q_1(s) \\ Q_2(s) \end{bmatrix} + \begin{bmatrix} 0 \\ R/L \end{bmatrix} X(s)$$

$$Y(s) = [0 \quad 1] \begin{bmatrix} Q_1(s) \\ Q_2(s) \end{bmatrix} + [0] X(s)$$

$$[A] = \begin{bmatrix} 0 & -1/LC \\ 1 & -R/L \end{bmatrix} \quad [B] = \begin{bmatrix} 0 \\ R/L \end{bmatrix} \quad [C] = [0 \quad 1] \quad [D] = [0]$$

ou

$$s \begin{bmatrix} V_C(s) \\ I_L(s) \end{bmatrix} = \begin{bmatrix} 0 & 1/C \\ -1/L & -R/L \end{bmatrix} \begin{bmatrix} V_C(s) \\ I_L(s) \end{bmatrix} + \begin{bmatrix} 0 \\ 1/L \end{bmatrix} X(s)$$

$$Y(s) = [0 \quad R] \begin{bmatrix} V_C(s) \\ I_L(s) \end{bmatrix} + [0] X(s)$$

$$[A] = \begin{bmatrix} 0 & 1/C \\ -1/L & -R/L \end{bmatrix} \quad [B] = \begin{bmatrix} 0 \\ 1/L \end{bmatrix} \quad [C] = [0 \quad R] \quad [D] = [0]$$