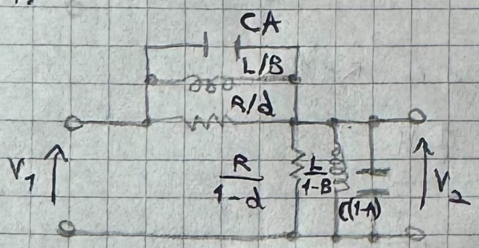
Matías Cassino

TS6: "RTA en frecuencia de filtros pasivos RLC"

HOJA N°

FECHA

1.



=>

donde $Y_1 = \frac{1}{Z_1}$ con $Y_1 = \frac{1}{R/\alpha} + \frac{1}{SL/B} + \frac{1}{(1/SCA)} = \frac{\alpha}{R} + \frac{B}{SL} + SCA$

$Y_2 = \frac{1}{Z_2}$ con $Y_2 = \frac{1}{R/1-\alpha} + \frac{1}{SL/1-B} + \frac{1}{1/C(1-A)S} = \frac{1-\alpha}{R} + \frac{1-B}{SL} + SC(1-A)$

Luego: $\frac{V_2}{V_1} = \frac{Y_1}{Y_1+Y_2} = \frac{\frac{\alpha}{R} + \frac{B}{SL} + SCA}{\frac{\alpha}{R} + \frac{B}{SL} + SCA + \frac{1-\alpha}{R} + \frac{1-B}{SL} + C(1-A)S} = T(S) =>$

$$T(S) = \frac{\frac{\alpha}{R} + \frac{B}{SL} + SCA}{\frac{1}{R} + \frac{1}{SL} + CS} = \frac{S^2CLA + \frac{SL\alpha}{R} + B}{S^2CL + \frac{SL}{R} + 1} = \frac{S^2A + \frac{S\alpha}{RC} + \frac{B}{CL}}{S^2 + \frac{S}{RC} + \frac{1}{CL}} =>$$

$$T(S) = A\,\frac{\left(S^2 + \frac{S\alpha}{RCA} + \frac{B}{CLA}\right)}{S^2 + \frac{S}{CR} + \frac{1}{CL}}$$ que se corresponde con $T(S) = K \cdot \frac{(S^2 + S\omega_{0z}/Q_z + \omega_{0z}^2)}{S^2 + S\omega_{0p}/Q_p + \omega_{0p}^2}$