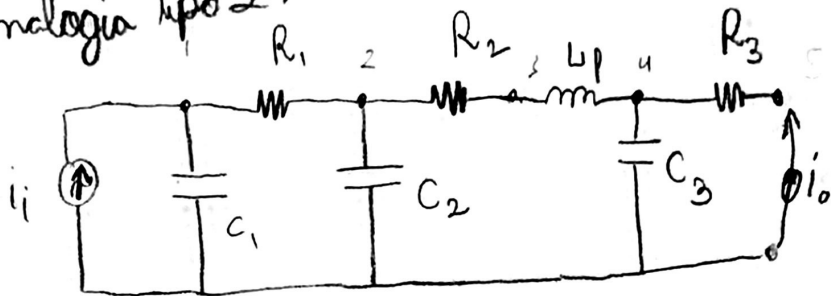


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PME 3380

Exc. 22/09

① Analogia Tipo 2:



Plus más usados

$$V_1 \left(C_1 D + \frac{1}{R_1} \right) - V_2 \left(\frac{1}{R_1} \right) = i_i \quad I$$

$$V_2 \left(C_2 D + \frac{1}{R_1} + \frac{1}{R_2} \right) - V_1 \frac{1}{R_1} - V_3 \frac{1}{R_2} = 0 \quad II$$

$$V_3 \left(\frac{1}{R_2} + \frac{1}{L_p D} \right) - V_2 \frac{1}{R_2} - V_4 \frac{1}{L_p D} = 0 \quad III$$

$$V_4 \left(C_3 D + \frac{1}{L_p D} + \frac{1}{R_3} \right) - V_3 \left(\frac{1}{L_p D} \right) = i_o \quad IV$$

Fazenda a analogia p/ fluido

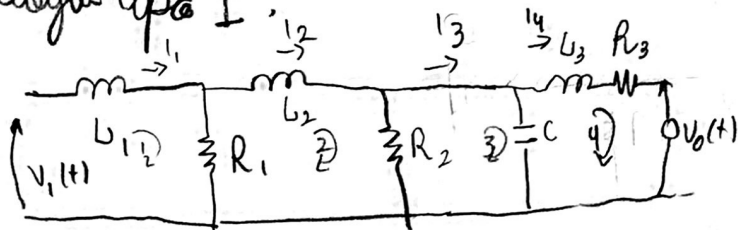
$$\dot{P}_1 \frac{A_1}{\rho g} + \frac{P_1 - P_2}{\rho g R_{p1}} = Q_i(t) \Rightarrow A_1 \dot{h}_1 + \frac{h_1 - h_2}{R_{p1}} = Q_i(t)$$

$$\dot{P}_2 \frac{A_2}{\rho g} + \frac{P_2 - P_1}{\rho g R_{p1}} + \frac{P_2 - P_3}{R_{p2} \rho g} = 0 \Rightarrow A_2 \dot{h}_2 + \frac{h_2 - h_1}{R_{p1}} + \frac{h_2 - h_3}{R_{p2}} = 0$$

$$\frac{P_3 - P_2}{\rho g R_{p2}} + \frac{P_3 - P_4}{L_p D} = 0 \Rightarrow \frac{h_3 - h_2}{R_{p2}} + \frac{\rho g}{l} \int h_3 - h_4 dt = 0$$

$$A_3 \dot{h}_4 + \frac{\rho g}{l} \int h_4 - h_3 dt + \frac{h_4}{R_{p3}} = Q_o(t)$$

Analogia tipo 1:



↓ P/ as malhas:

$$i_1 L_1 D + R_1(i_1 - i_2) = V_1(t)$$

$$i_2 L_2 D - R_1(i_1 - i_2) + R_2(i_2 - i_3) = 0$$

$$i_4 \left(L_3 D + \frac{1}{R_3} \right) - \frac{1}{CD} (i_3 - i_4) = V_0(t)$$

$$R_2(i_3 - i_2) = \frac{1}{CD} (i_4 - i_3)$$

Analogia

$$A_1 \dot{h}_1 + \frac{h_1 - h_2}{R_{p1}} = Q_i(t)$$

$$\Rightarrow A_2 \dot{h}_2 + \frac{h_2 - h_1}{R_{p1}} + \frac{h_2 - h_3}{R_{p2}} = 0$$

$$A_3 \dot{h}_4 + \frac{h_4}{R_{p3}} + \frac{\rho g}{l} \int h_4 - h_3 dt = Q_o(t)$$

$$\frac{h_3 - h_2}{R_{p2}} = \frac{\rho g}{l} \int h_4 - h_3 dt$$