S T Q Q S S D

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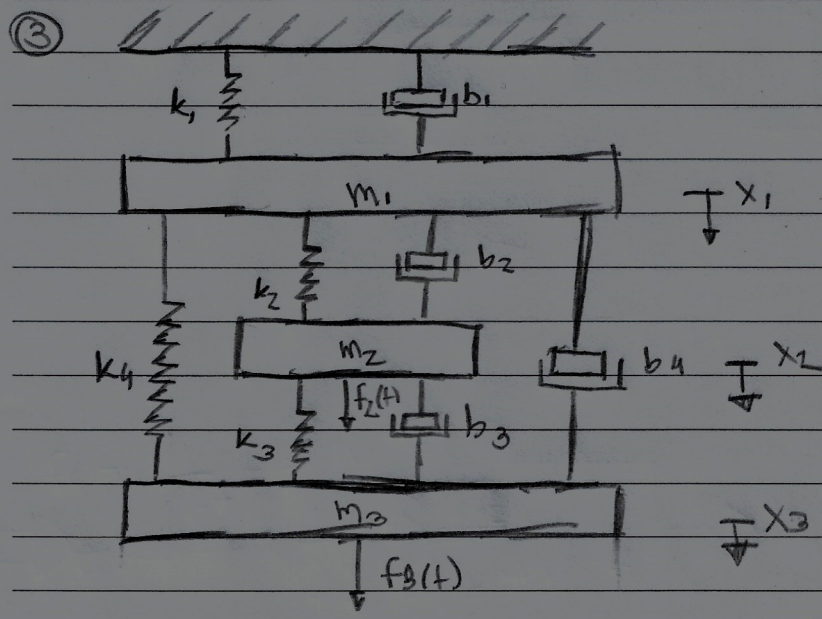
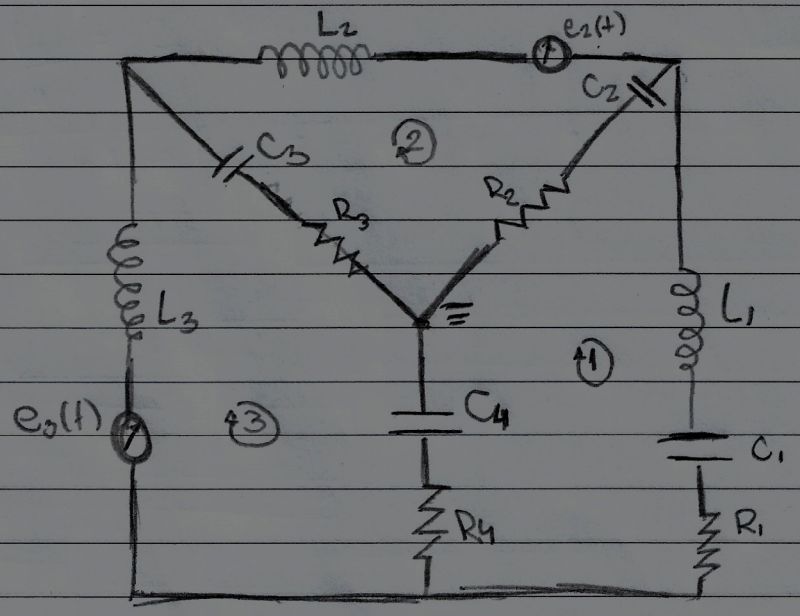
Rogério Yukio Tamaoki Rodriguez - 10772709



Circuito elétrico



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S T Q Q S S D

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Malha 1

1)

$$L_1 D i_1 + \frac{1}{C_1 D} i_1 + R_1 i_1 + R_4(i_1 - i_3) + \frac{1}{C_4 D}(i_1 - i_3) + R_2(i_1 - i_2) + \frac{1}{C_2 D}(i_1 - i_2) = 0$$

2)

$$L_2 D i_2 + \frac{1}{C_2 D}(i_2 - i_1) + R_2(i_2 - i_1) + R_3(i_2 - i_3) + \frac{1}{C_3 D}(i_2 - i_3) = e_2(t)$$

3)

$$L_3 D i_3 + \frac{1}{C_3 D}(i_3 - i_2) + R_3(i_3 - i_2) + \frac{1}{C_4 D}(i_3 - i_1) + R_4(i_3 - i_1) = e_3(t)$$

Por analogia

$$\begin{cases} m_1 \ddot{x}_1 + k_1 x_1 + b_1 \dot{x}_1 + b_4(\dot{x}_1 - \dot{x}_3) + k_4(x_1 - x_3) + b_2(\dot{x}_1 - \dot{x}_2) + k_2(x_1 - x_2) = 0 \\ m_2 \ddot{x}_2 + k_2(x_2 - x_1) + b_2(\dot{x}_2 - \dot{x}_1) + b_3(\dot{x}_2 - \dot{x}_3) + k_3(x_2 - x_3) = f_2(t) \\ m_3 \ddot{x}_3 + k_3(x_3 - x_2) + b_3(\dot{x}_3 - \dot{x}_2) + k_4(x_3 - x_1) + b_4(\dot{x}_3 - \dot{x}_1) = f_3(t) \end{cases}$$

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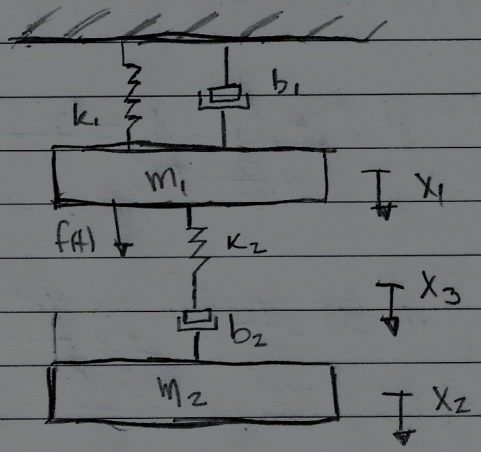
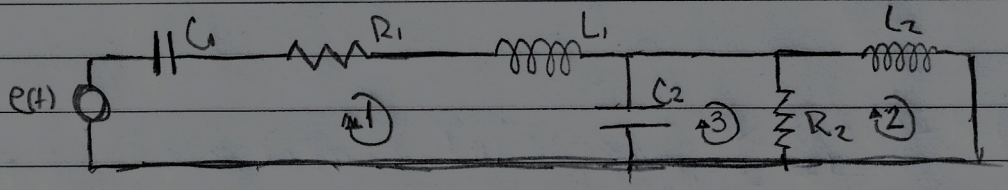
(6)



Circuito elétrico



1).

$$\frac{1}{C_1 D} i_1 + R_1 i_1 + L_1 D i_1 + \frac{1}{C_2 D}(i_1 - i_3) = e(t)$$

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

3) $R_2(i_3 - i_2) + \frac{1}{C_2 D}(i_3 - i_1)$

$$\begin{cases} k_1 x_1 + b_1 \dot{x}_1 + m_1 \ddot{x}_1 + k_2(x_1 - x_3) = e(t) \\ m_2 \ddot{x}_2 + b_2(\dot{x}_2 - \dot{x}_3) = 0 \\ k_2(x_3 - x_1) + b_2(\dot{x}_3 - \dot{x}_2) = 0 \end{cases}$$

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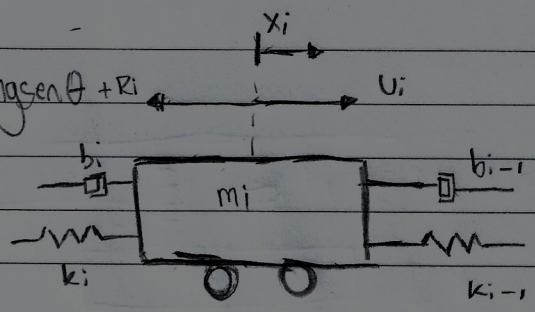
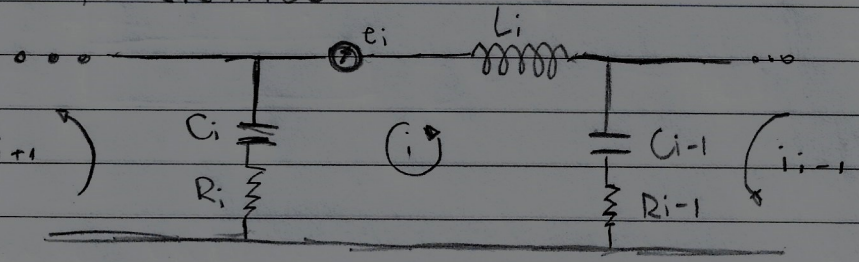
(7)



Circuito elétrico



malha i):

$$L_i D i_i + \frac{1}{C_{i+1} D}(i_i - i_{i-1}) + R_{i-1}(i_i - i_{i-1}) + R_i(i_i - i_{i+1}) + \frac{1}{C_i D}(i_i - i_{i+1})$$

$$m_i \ddot{x}_i + k_{i+1}(x_i - x_{i-1}) + b_i(\dot{x}_i - \dot{x}_{i-1}) + b_i(\dot{x}_i - \dot{x}_{i+1}) + k_i(x_i - x_{i+1}) = U_i - m_i g \operatorname{sen}\theta - R_i$$

(4)

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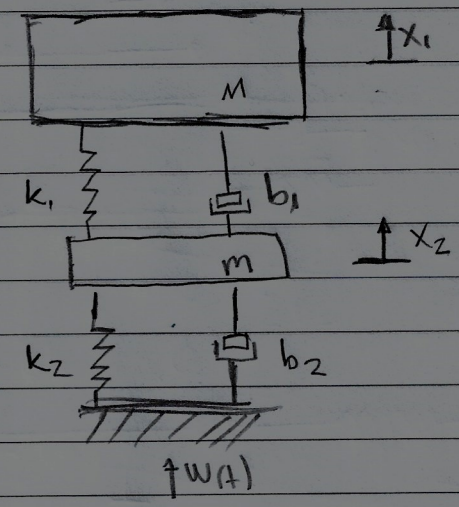
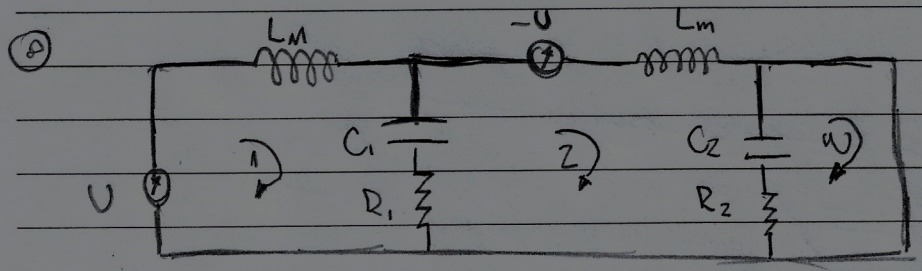
(8)



Circuito elétrico



1) $L_M D i_1 + \frac{1}{C_1 D}(i_1 - i_2) + R_1(i_1 - i_2) = U$

2) $L_m D i_2 + \frac{1}{C_2 D}(i_2 - i_w) + R_2(i_2 - i_w) + R_1(i_2 - i_1) + \frac{1}{C_1 D}(i_2 - i_1) = -U$

w) $R_2(i_w - i_2) + \frac{1}{C_2 D}(i_w - i_2) = 0$

$$M\ddot{x}_1 + k_1(x_1 - x_2) + b_1(\dot{x}_1 - \dot{x}_2) = U$$
$$m\ddot{x}_2 + k_1(x_2 - w) + b_2(\dot{x}_2 - \dot{w}) + b_1(\dot{x}_2 - \dot{x}_1) + k_1(x_2 - x_1) = -U$$
$$b_2(\dot{w} - \dot{x}_2) + k_2(w - x_2) = 0$$

(5)

spiral®

(b)

$$M\ddot{x}_1 + k_1(x_1 - x_2) + b_1(\dot{x}_1 - \dot{x}_2) = U$$

$$m\ddot{x}_2 + k_2(x_2 - x_3) + b_2(\dot{x}_2 - \dot{x}_3) + b_1(\dot{x}_2 - \dot{x}_1) + k_1(x_2 - x_1) = -U + W$$

$$b_2(\dot{x}_3 - \dot{x}_2) + k_2(x_3 - x_2) = 0$$