

Motori iz zadatka 106 nisu paralelno vezani na jedan inverter, već imaju zasebne frekventne pretvarače.

Kako treba podesiti učestanosti da motori pokreću opterećenje, a da pri tome raspodela opterećenja bude srazmerna nominalnim momentima motora.

$$\text{Podaci o motoru 1:} \quad R_{r1} := 0.05 \quad \lambda_{s1} := 0.08 \quad \lambda_{r1} := \lambda_{s1}$$

$$\text{Podaci o motoru 2:} \quad R_{r2} := 0.06 \quad \lambda_{s2} := 0.07 \quad \lambda_{r2} := \lambda_{s2}$$

$$m_m(\omega) := 2 \cdot \omega \quad \text{Karakteristika opterećenja}$$

$$u_s(\omega_s) := \begin{cases} \omega_s & \text{if } \omega_s \leq 1 \\ 1 & \text{if } \omega_s > 1 \end{cases} \quad \begin{array}{l} \text{Funkcija napona od učestanosti} \\ U/f = \text{const.} \end{array}$$

$$m_{e1}(\omega_s, \omega_r) := \left(\frac{u_s(\omega_s)}{\omega_s} \right)^2 \cdot \frac{R_{r1} \cdot \omega_r}{R_{r1}^2 + \omega_r^2 \cdot (\lambda_{s1} + \lambda_{r1})^2}$$

$$m_{e2}(\omega_s, \omega_r) := \left(\frac{u_s(\omega_s)}{\omega_s} \right)^2 \cdot \frac{R_{r2} \cdot \omega_r}{R_{r2}^2 + \omega_r^2 \cdot (\lambda_{s2} + \lambda_{r2})^2}$$

$$\omega(\omega_s, \omega_r) := \omega_s - \omega_r$$

A) Odrediti učestanosti i momente motora kada je brzina 0.8 r.j.

$$\omega_A := 0.8 \quad \omega_{r1} := 0 \quad \omega_{r2} := 0$$

$$K_r := 1 \quad \text{Koeficijent raspodele opterećenja}$$

Given

$$m_{e1}(\omega_A + \omega_{r1}, \omega_{r1}) + m_{e2}(\omega_A + \omega_{r2}, \omega_{r2}) = m_m(\omega_A)$$

$$m_{e1}(\omega_A + \omega_{r1}, \omega_{r1}) = K_r \cdot m_{e2}(\omega_A + \omega_{r2}, \omega_{r2})$$

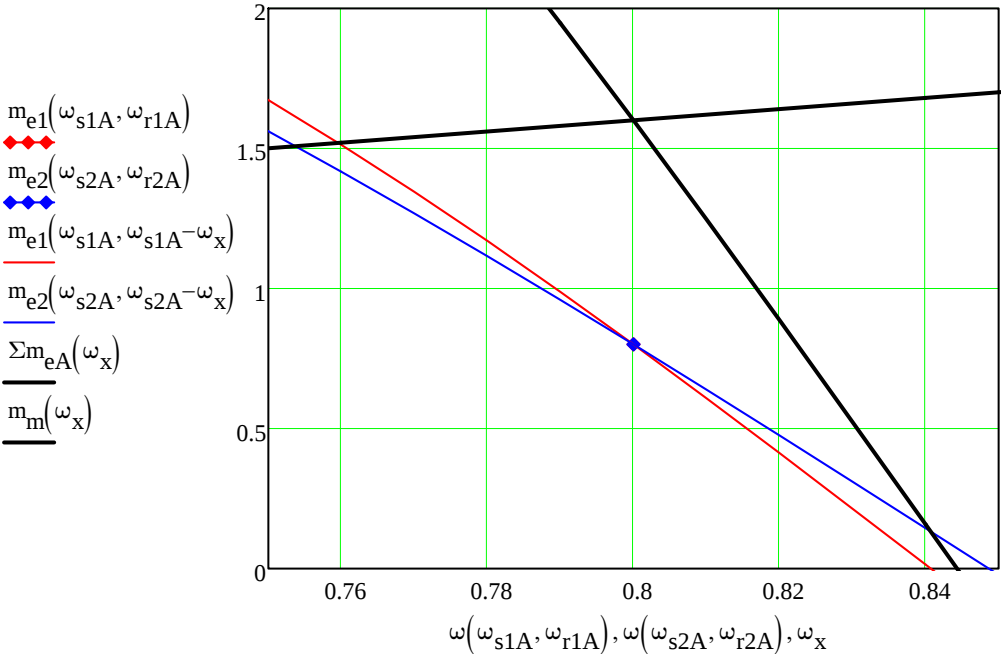
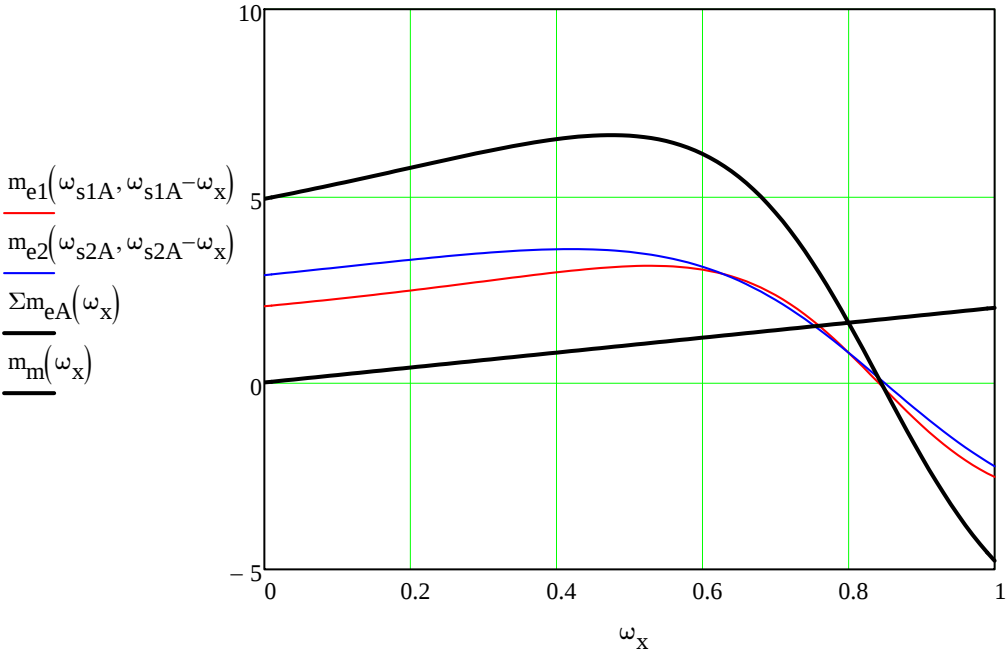
$$\begin{pmatrix} \omega_{r1A} \\ \omega_{r2A} \end{pmatrix} := \text{Find}(\omega_{r1}, \omega_{r2}) \quad \omega_{r1A} = 0.04068 \quad \omega_{r2A} = 0.04862$$

$$\omega_{s1A} := \omega_A + \omega_{r1A} \quad \omega_{s1A} = 0.841 \quad m_{e1}(\omega_{s1A}, \omega_{r1A}) = 0.8$$

$$\omega_{s2A} := \omega_A + \omega_{r2A} \quad \omega_{s2A} = 0.849 \quad m_{e2}(\omega_{s2A}, \omega_{r2A}) = 0.8$$

$$\Sigma m_{eA}(\omega_x) := m_{e1}(\omega_{s1A}, \omega_{s1A} - \omega_x) + m_{e2}(\omega_{s2A}, \omega_{s2A} - \omega_x)$$

$$\omega_x := 0, 0.01 \dots 1$$



B) Odrediti učestanost i momente motora kada je brzina 1.2 r.j.

$$\omega_B := 1.2$$

$$K_r := 1$$

Koeficijent raspodele opterećenja

Given

$$m_{e1}(\omega_B + \omega_{r1}, \omega_{r1}) + m_{e2}(\omega_B + \omega_{r2}, \omega_{r2}) = m_m(\omega_B)$$

$$m_{e1}(\omega_B + \omega_{r1}, \omega_{r1}) = K_r \cdot m_{e2}(\omega_B + \omega_{r2}, \omega_{r2})$$

$$\begin{pmatrix} \omega_{r1B} \\ \omega_{r2B} \end{pmatrix} := \text{Find}(\omega_{r1}, \omega_{r2}) \quad \omega_{r1B} = 0.11993 \quad \omega_{r2B} = 0.14528$$

$$\omega_{s1B} := \omega_B + \omega_{r1B} \quad \omega_{s1B} = 1.32 \quad m_{e1}(\omega_{s1B}, \omega_{r1B}) = 1.2$$

$$\omega_{s2B} := \omega_B + \omega_{r2B} \quad \omega_{s2B} = 1.345 \quad m_{e2}(\omega_{s2B}, \omega_{r2B}) = 1.2$$

$$\Sigma m_{eB}(\omega_x) := m_{e1}(\omega_{s1B}, \omega_{s1B} - \omega_x) + m_{e2}(\omega_{s2B}, \omega_{s2B} - \omega_x)$$

$$\omega_x := 0, 0.01 \dots 1.5$$

