05.04.2012г.

Електромагнитен момент на асинхронен двигател

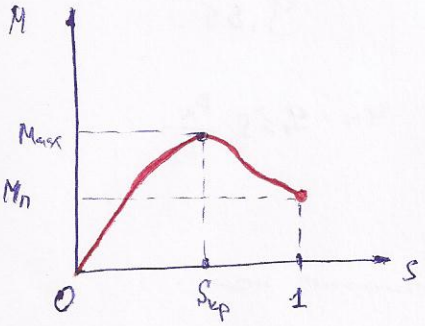
$P = M\Omega$ $\quad P_{елм} = 3 E_{2(1)} I_2 \cos\psi_2$ $\quad E_{2(1)} = 4{,}44 f_2 w_2 k_{w_2} \Phi_0$

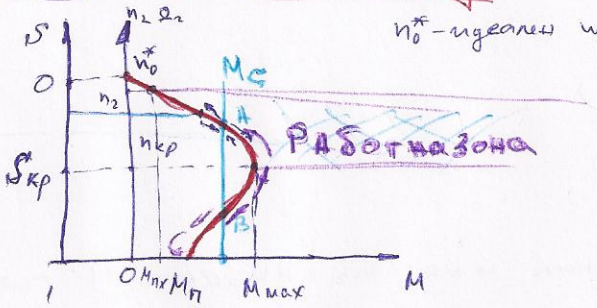
$M = \frac{P_{елм}}{\Omega_1}$ $\quad M = \frac{3}{\Omega_1} \cdot E_{2(1)} I_2 \cos\psi_2$ $\quad \psi_2 = arctg \frac{X_{2(1)}}{R_2/s}$ $\quad I_2 = \frac{E_{2(1)}}{\sqrt{R_2^2/s + X_{2\sigma(1)}}}$

$\boxed{M = f(s)}$ $\quad s = \frac{n_1 - n_2}{n_1}$

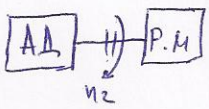
~~моментна х-ка~~

механична х-ка $\quad \boxed{n = f(M)}$ $\quad \boxed{n_2 = (\Omega_2) = f(M)}$





n_0^* – идеален празен ход



$M_Д = M_c$! $\quad n_2 = const$

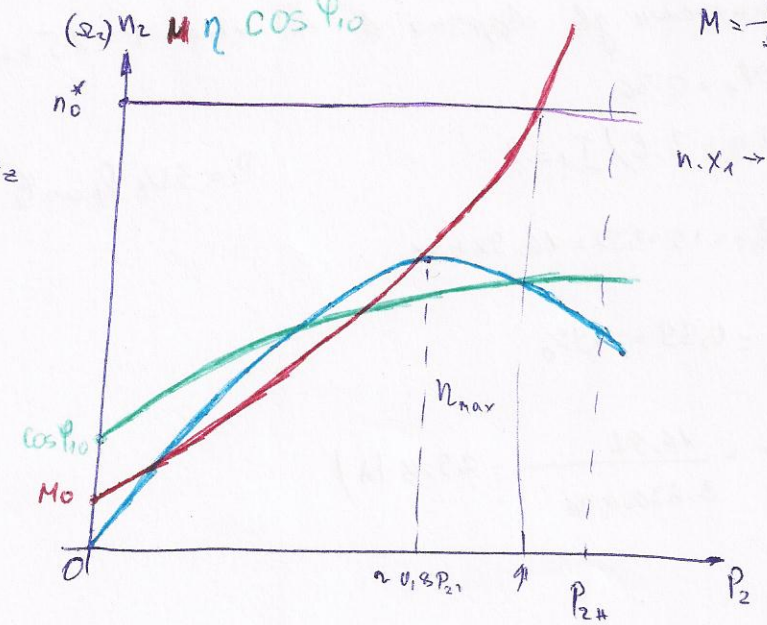
т. А $\quad M_c > M_Д$

Работни характеристики на асинхронния двигател

$n_2(\Omega_2) = f(P_2)$ – скоростна характеристика

$$\left.\begin{array}{l} M = f(P_2) \\ \eta = f(P_2) \\ \cos\varphi = f(P_2) \\ \hline I_1 = f(P_2) \\ s = f(P_2) \end{array}\right\} \quad U_1 = U_{л(1)} \quad f = f_н = 50\,Hz$$

$$\left|\begin{array}{l} \Omega_2 = \Omega_1 (1 - s) \\ n_2 = \frac{60 \cdot f}{p} (1 - s) \end{array}\right.$$



$M = \frac{P_2}{\Omega_2} = \frac{P_2}{\Omega_1 (1 - s)}$

н. х. $\rightarrow P_{1o} = U_1 I_{1o} \cos\varphi_{1o}$ $\quad (M_s = (\cos\varphi)_{max})$