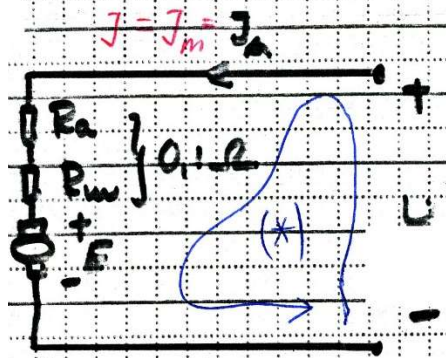


A5.21

Seriemotor



Magn. småttad $\Rightarrow \Phi = k \cdot I_m = k \cdot I_a$

I: $U_I = 220V$ $n_I = 1000 \text{ rpm}$
 $J_{AI} = 100A$ $M_I = M$

II: $U_{II} = 220V$ $n_{II} = ?$
 $J_{AII} = ?$ $M_{II} = 4M$

$$\left. \begin{aligned} M_I &= k_2 \cdot J_{AI} \cdot \Phi_I = k_2 \cdot k \cdot J_{AI}^2 \\ M_{II} &= \phantom{J_{AI}} = k_2 \cdot k \cdot J_{AII}^2 \end{aligned} \right\} \Rightarrow$$

$$\frac{J_{AI}^2}{J_{AII}^2} = \frac{1}{4} \Rightarrow J_{AII} = 2 \cdot J_{AI} = \underline{\underline{200A}}$$

(*) \rightarrow

$$+U - R_m J - R_a J - E = 0$$

$$\text{FALL I} \Rightarrow 220 - 0,05 \cdot 100 - 0,05 \cdot 100 - E_I = 0$$

INS I (*)

$$\text{FALL II} \Rightarrow 220 - 0,05 \cdot 200 - 0,05 \cdot 200 - E_{II} = 0$$

INS I (*)

$$\rightarrow \begin{cases} E_I = 210 \text{ V} \\ E_{II} = 200 \text{ V} \end{cases}$$

$$\frac{E_I}{E_{II}} = \frac{k \cancel{\Phi_I} n_I}{k \cancel{\Phi_{II}} n_{II}} = \left| \Phi = k \underset{\substack{\uparrow \\ J_a = J_m}}{J_m} \right| =$$

$$= \frac{k \cancel{J_I} n_I}{k \cancel{J_{II}} n_{II}} \Rightarrow$$

$$\frac{210}{200} = \frac{100 \cdot 1000}{200 \cdot n_{II}} \Rightarrow \underline{n_{II} = 476 \text{ RPM}}$$