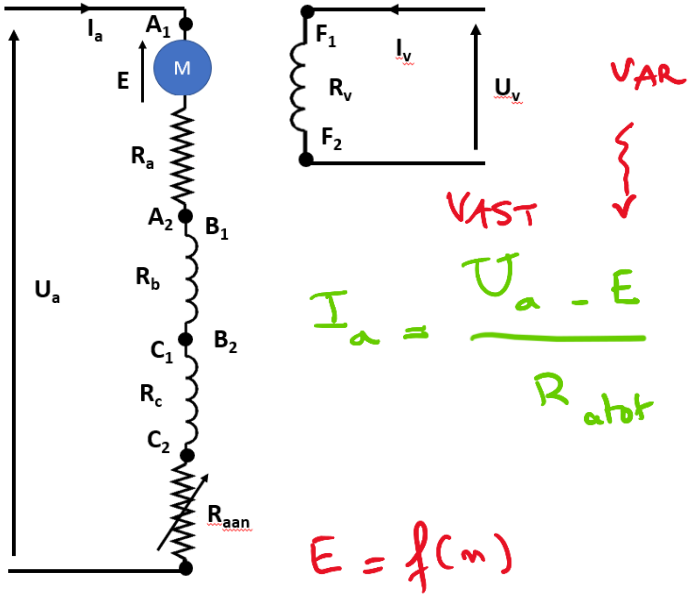
1.14 Aanloop

1.14.1. Aanloopstroom $I_{aan} = f(n)$

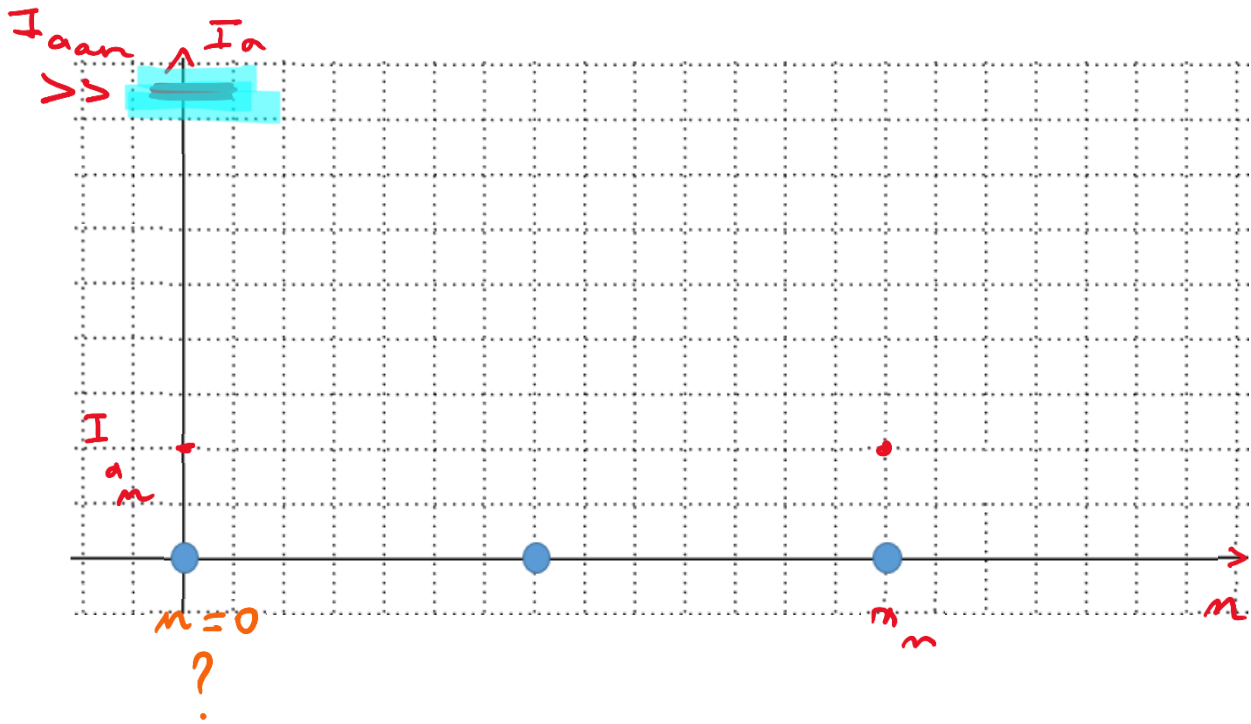


VAR

VAST

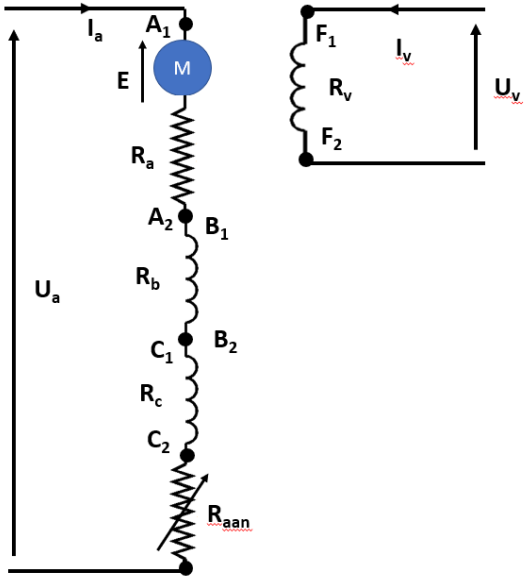
$$I_a = \frac{U_a - E}{R_{atot}}$$

$E = f(n)$



1.14 Aanloop

1.14.1. Aanloopstroom $I_{aan} = f(n)$



$n_m \longrightarrow E >> \longrightarrow U_a - E >> \longrightarrow I_a <<$

$n = 0 \longrightarrow E = k_n \, m \, \phi \longrightarrow U_a - 0 \longrightarrow I_{a\,aan} = \frac{U_a - 0}{R_{ator}}$

$E = 0$

$>>>>>$

OPL I_{aan} ↘ ⟶ U_a ↘ , R_{ator} ↗

1.14 Aanloop

1.14.2. Aanloopmethoden n = f(I_{aan})

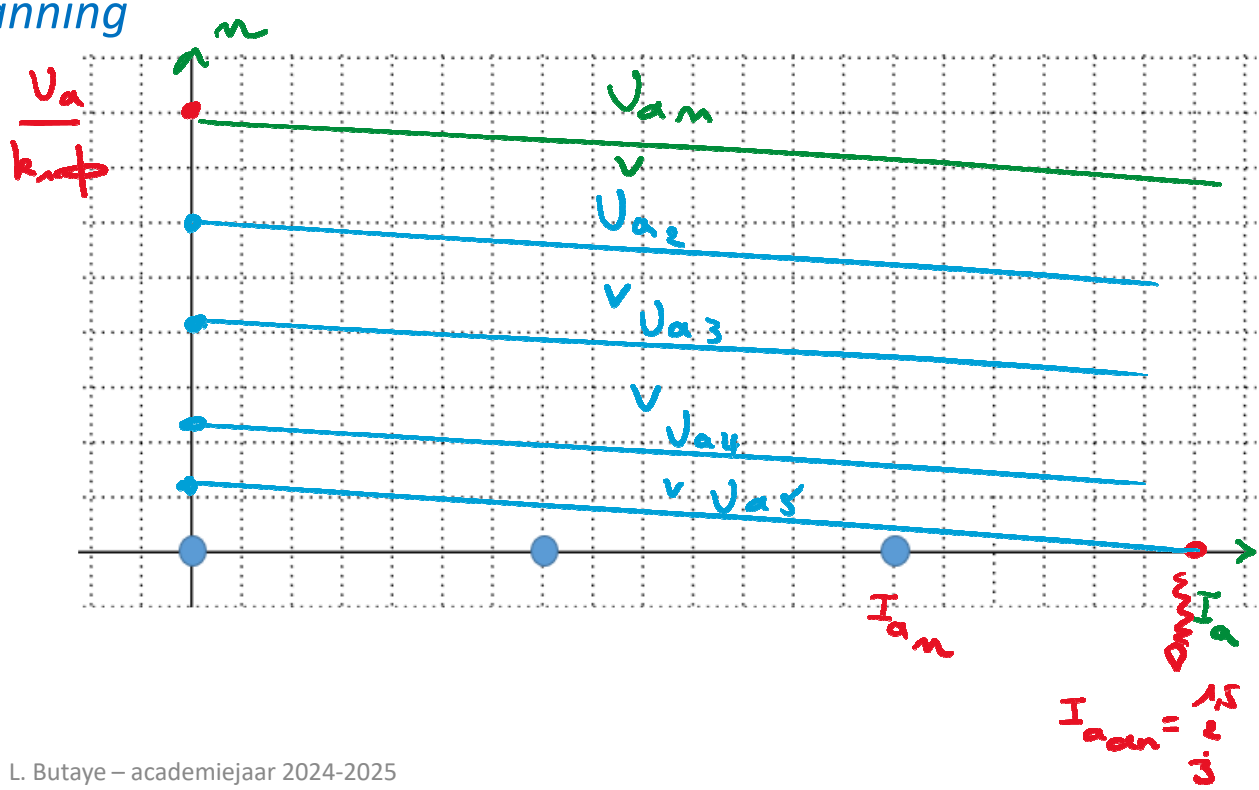
1.14.2.1. Variatie in de ankerspanning

$$E = k_n \cdot n \cdot \Phi$$

$$n = \frac{E}{k_n \cdot \Phi}$$

$$n = \frac{U_a - R_{atot} \cdot I_a}{k_n \cdot \Phi}$$

$$n = \frac{U_a}{k_n \cdot \Phi} - \frac{R_{atot}}{k_n \cdot \Phi} I_a$$



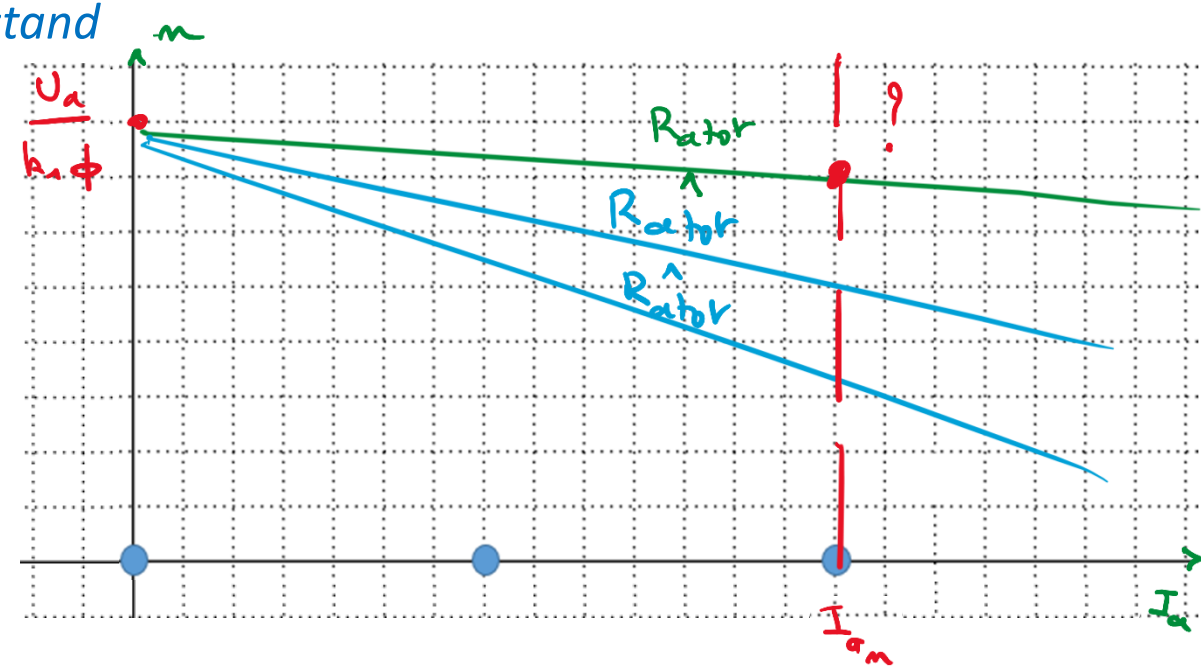
1.14 Aanloop

1.14.2. Aanloopmethoden n = f(I_{aan})

1.14.2.2. Variatie in de ankerweerstand

$$n = \frac{U_a}{k_n \Phi} - \frac{R_{atot}}{k_n \Phi} I_a$$

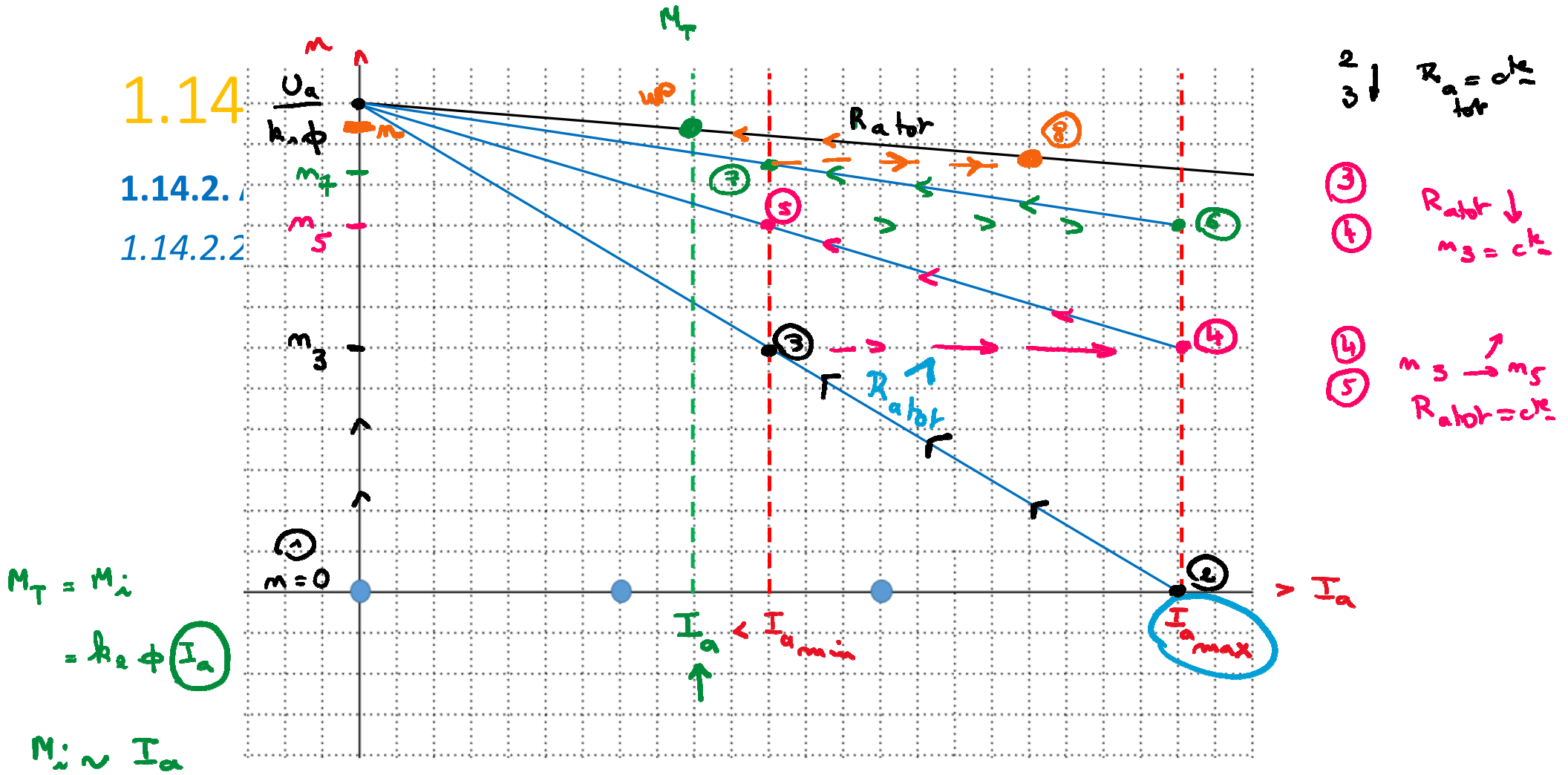
R_{atot} ↑



1.14

1.14.2.

1.14.2.2



1.14 Aanloop

1.14.2. Aanloopmethoden

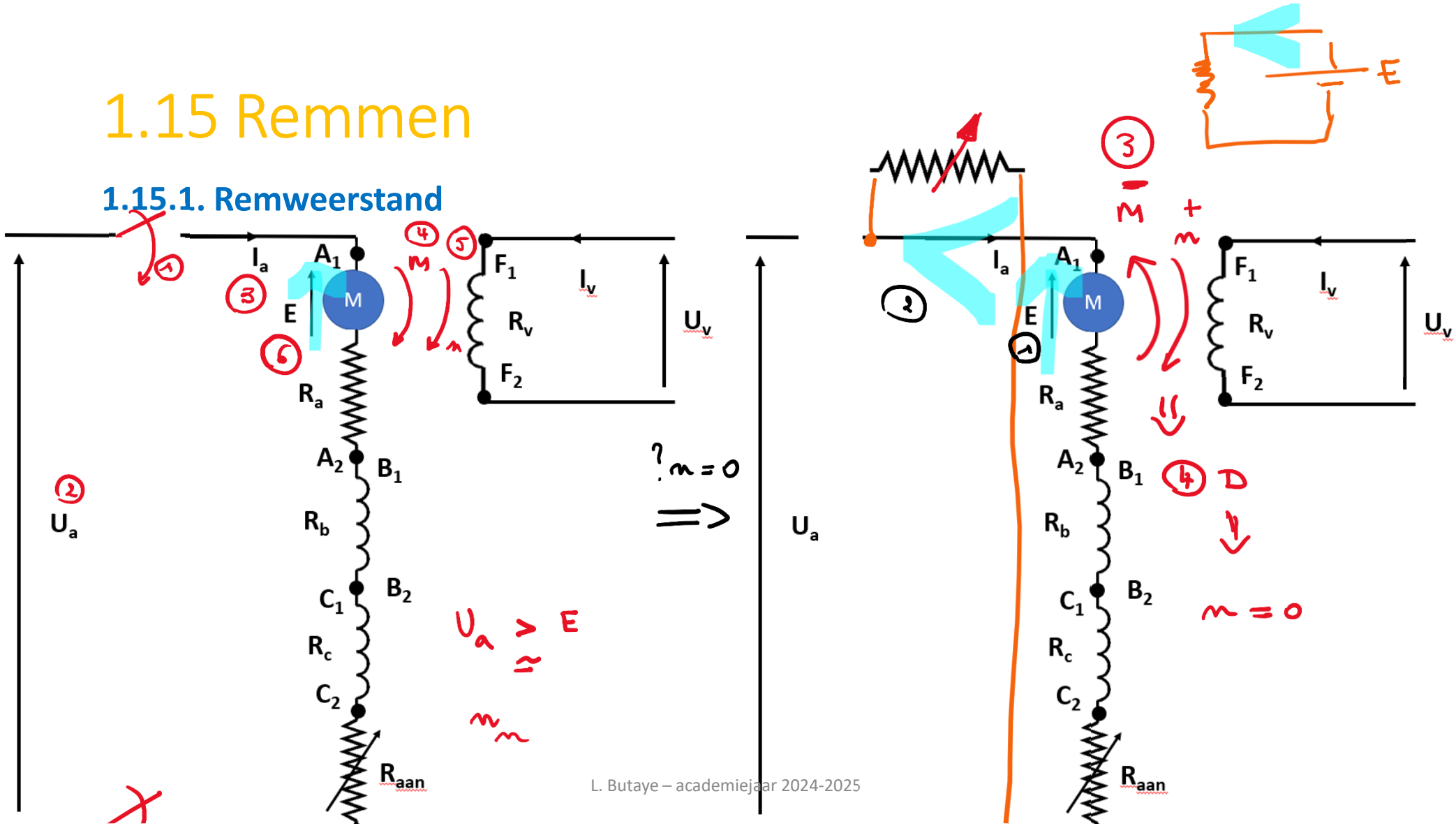
1.14.2.2. Variatie in de ankerweerstand

Opgenomen nominaal vermogen in kW	$k = I_{max}/I_{nom}$
tot 0,25 kW	5
van 0,25 kW tot 0,75 kW	3
van 0,75 kW tot 1,5 kW	2,5
van 1,5 kW tot 10 kW	2
boven 10 kW	1,5

Bron : http://slptech.be/Cursussen/DCmachines/3%20DC%20motoren%20wm.pdf

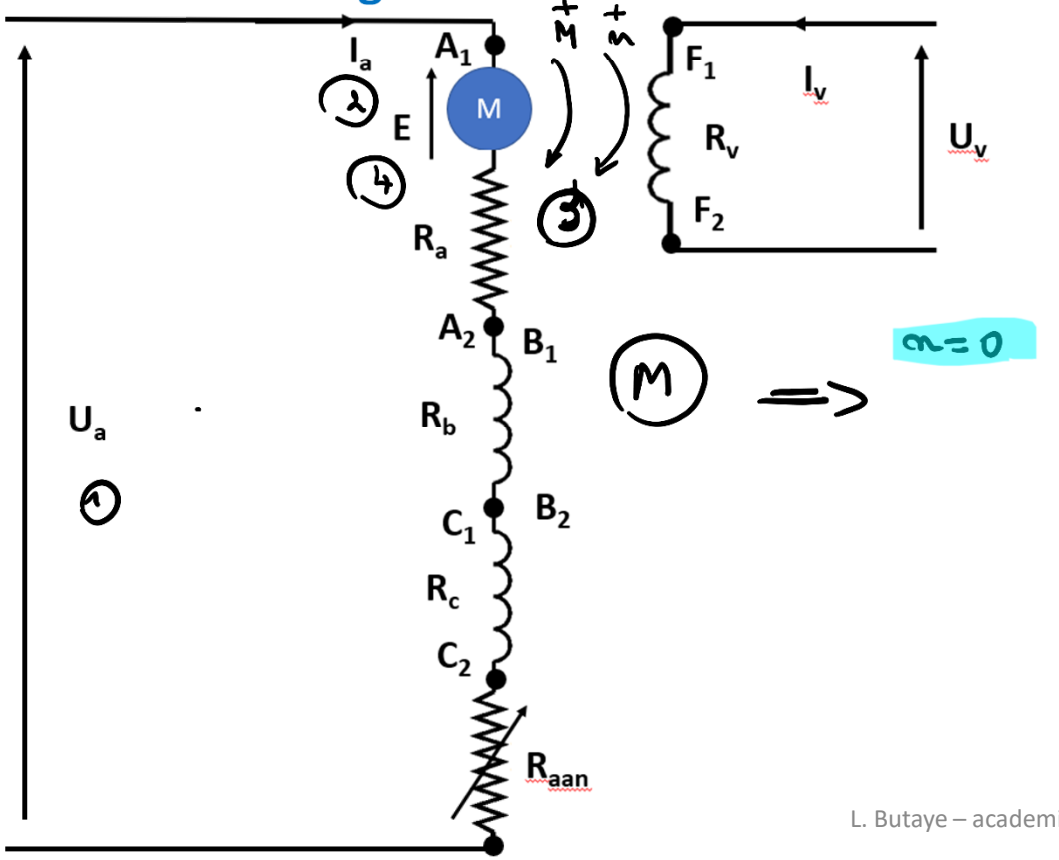
1.15 Remmen

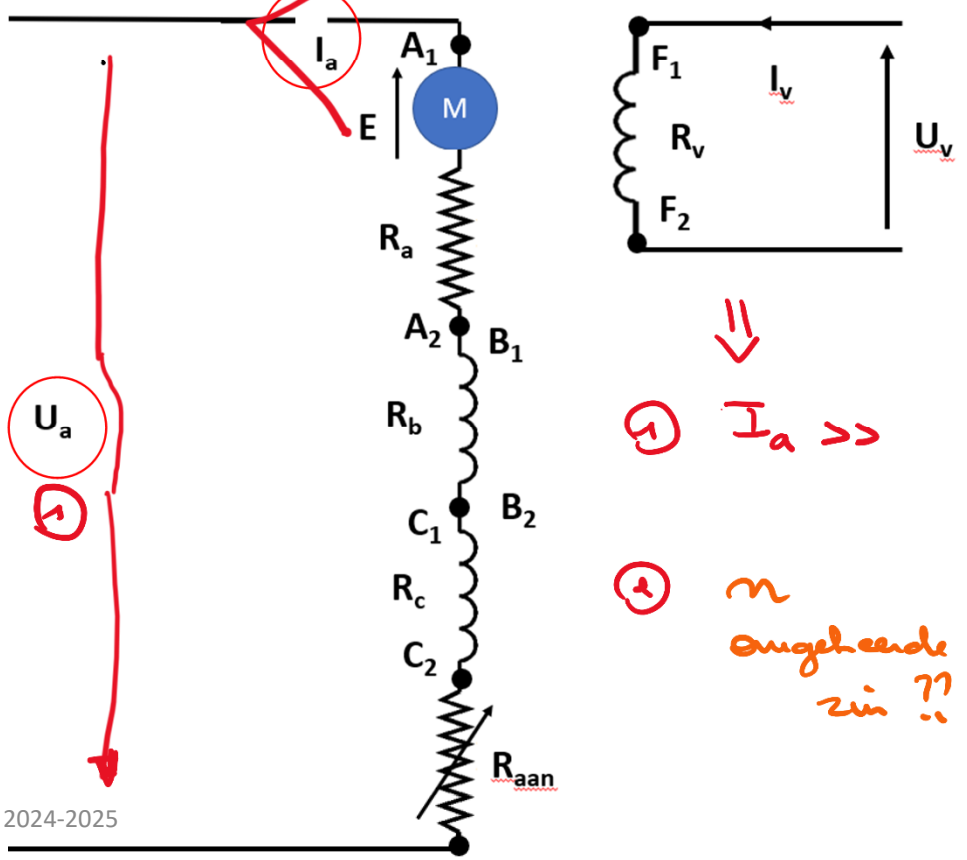
1.15.1. Remweerstand



1.15 Remmen

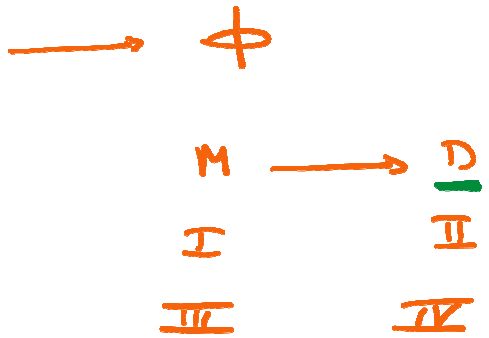
1.15.2. Tegenstroomremmen

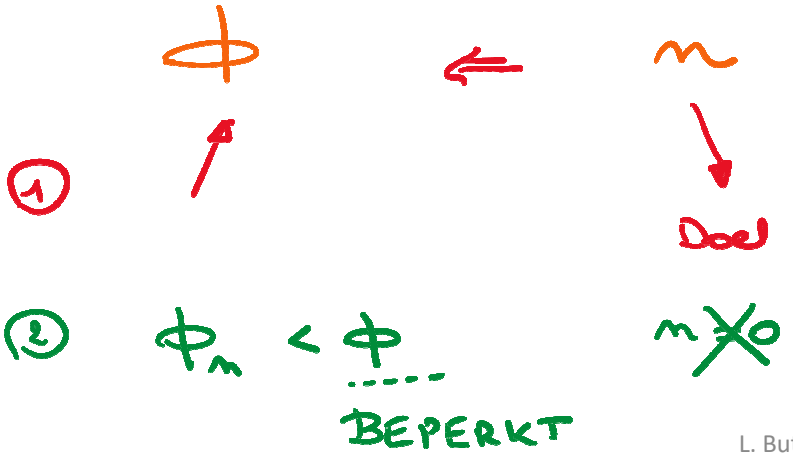




1.15 Remmen

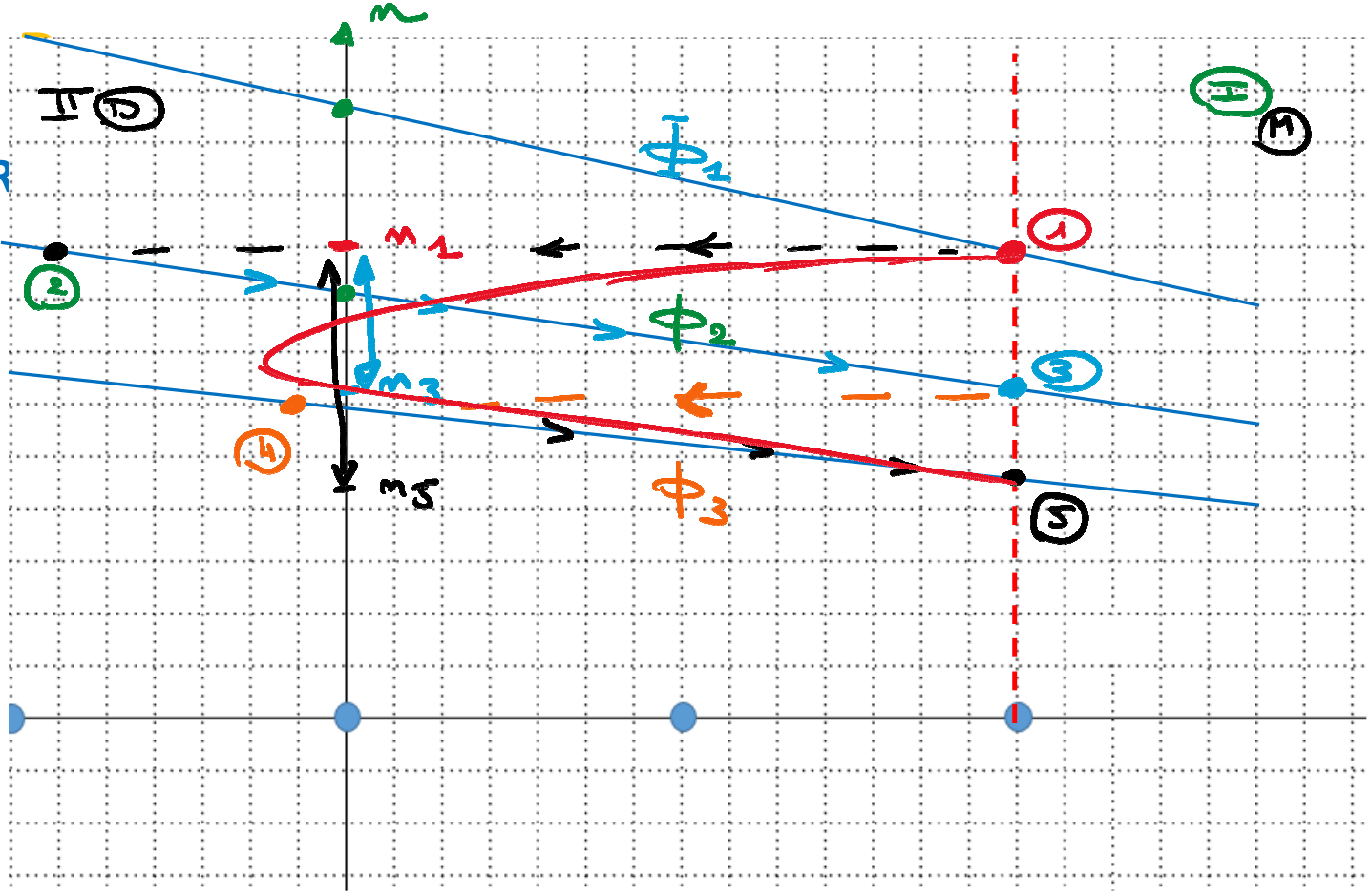
1.15.3 Recuperatief remmen





1.15

1.15.3. R



START

① m_1

Φ_1

① $\Phi_2 > \Phi_1$

$\downarrow$

$m_1 = ct$

$\downarrow$

D

③ $\Phi_2 = ct$

$m_1 \searrow m_3$

Δm

$\Phi_2 \rightarrow \Phi_3$

$m_3 = ct$

④

$\Phi_{3=ct}$

D → M

⑤