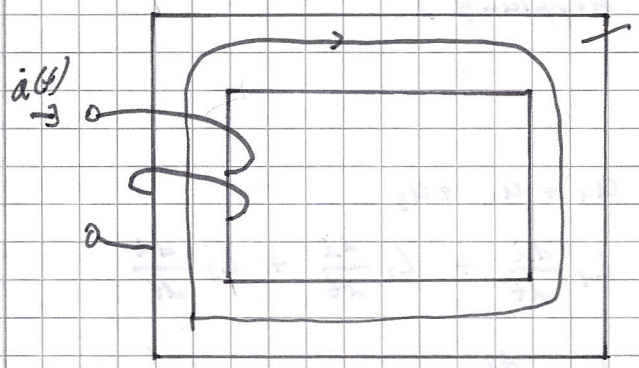


$$R_m = \frac{l_{Fe}}{\mu_0 \mu_r A}$$

$$\Psi = w \cdot \Phi = w \frac{\Theta}{R_m}$$

$$\Phi = \frac{\Theta}{R_m}$$ } magnetisch ohmsches Gesetz

$$\Theta = I \cdot w$$

$$\Phi = \frac{w^2 \cdot I}{R_m}$$

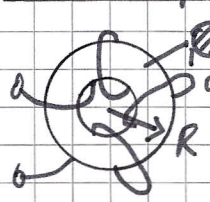
$$L = \frac{\Psi}{i} = \frac{w^2}{R_m} \qquad \lambda = \frac{w^2}{R_m}$$

A_L - Wert → Kennwert des Reziprokwertes des magnetischen Widerstandes

$$L = w^2 \cdot A_L \qquad A_L = \frac{1}{R_m}$$

$$L = \frac{\Psi}{i} = \frac{w^2 \cdot \Phi}{\Theta} = \frac{w^2 \int \vec{B}\, d\vec{A}}{\oint \vec{H}\, d\vec{l}}$$

z.B. Ringspule



$$A = \frac{\pi}{4} d^2 = \pi r^2$$

$$R_m = \frac{1}{\mu_0 \mu_r} \cdot \frac{l_{Fe}}{A}$$

$$= \frac{2\pi R}{\mu_0 \mu_r A}$$ ⇒ nur eine Näherung

$B(r) \approx$ const ⇝ $L = \frac{w^2}{R_m} = \frac{w^2 \mu_0 \mu_r A}{2\pi R}$