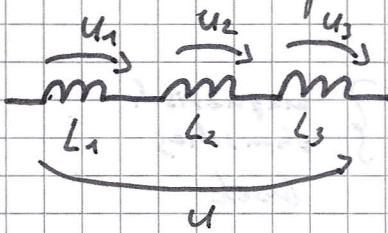


Zusammenschaltung von Induktivitäten (ohne magnetische Kopplung)

- Reihenschaltung



$$u = u_1 + u_2 + u_3$$

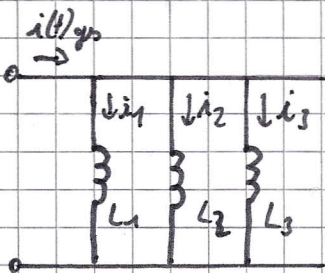
$$u = L_1 \frac{di}{dt} + L_2 \frac{di}{dt} + L_3 \frac{di}{dt}$$

$$= L_{ges} \frac{di}{dt}$$

$$\Rightarrow L_{ges} = L_1 + L_2 + L_3$$

$$L_{ges} = \sum_{i=1}^n L_i$$

- Parallelschaltung



$$i_{ges} = i_1 + i_2 + i_3$$

$$\frac{di_{ges}}{dt} = \frac{di_1}{dt} + \frac{di_2}{dt} + \frac{di_3}{dt}$$

$$u = L_1 \frac{di_1}{dt} = L_2 \frac{di_2}{dt} = L_3 \frac{di_3}{dt} = L_{ges} \frac{di_{ges}}{dt}$$

$$\frac{u}{L_1} = \frac{di_1}{dt} \quad \frac{u}{L_2} = \frac{di_2}{dt} \quad \frac{u}{L_3} = \frac{di_3}{dt}$$

$$\frac{u}{L_{ges}} = \frac{u}{L_1} + \frac{u}{L_2} + \frac{u}{L_3}$$

$$\frac{1}{L_{ges}} = \frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3}$$

$$\frac{1}{L_{ges}} = \sum_{i=1}^n \frac{1}{L_i}$$