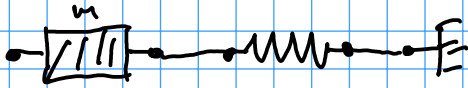
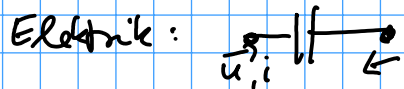


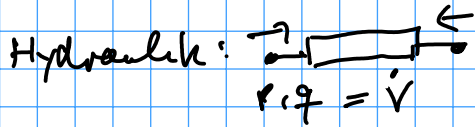
Gleichungen für Schwingkreise



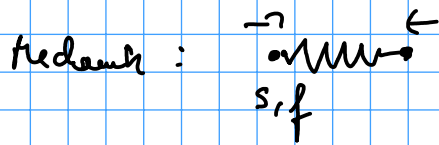
Connector: enthält Zustandsgrößen, 2 Arten: Flussvariable, Potentialvariable



$i = \dot{Q}$ zeitl. Änderungen ein- oder abfließen
 u häufig um eine konstante verschiebbar



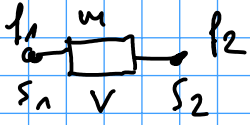
Flussgröße $q = \dot{V}$ $v = \int V$
 Potentialgröße p (Druck) \rightarrow const.



Flussgröße $f = \dot{p}$ (Impuls)
 Potentialgröße s



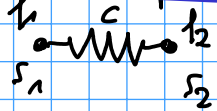
1. Flussvariable addieren sich zu 0 $l_1 + l_2 + l_3 = 0$
2. Potentialvariable sind alle gleich groß $s_1 = s_2 = s_3$



$$s_1 = s_2$$

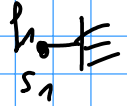
$$v = \dot{s}_2$$

$$m \ddot{v} = f_1 + f_2$$

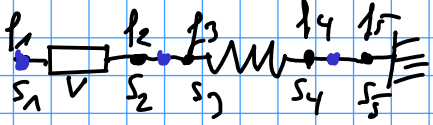


$$f_1 + f_2 = 0$$

$$f_2 = c(s_2 - s_1)$$



$$s_1 = 0$$



$$s_1 = s_2$$

$$v = \dot{s}_2$$

$$m \ddot{v} = f_1 + f_2$$

$$f_3 + f_4 = 0$$

$$f_4 = c(s_4 - s_3)$$

$$s_5 = 0$$

$$s_2 = s_3$$

$$f_2 + f_3 = 0$$

$$s_4 = s_5$$

$$f_4 + f_5 = 0$$

$$f_1 = 0$$

- (a)
- (b)
- (c)
- (d)
- (e)
- (f)
- (g)
- (h)
- (i)
- (j)
- (k)

s_1, s_2, s_4, s_5 , f_1, f_2, f_3 , f_4, f_5
a, d, e, f, g, h, i, j, k

$$f_1 = 0$$

$$s_5 = 0$$

$$s_4 = 0$$

$$s_3 = s_2$$

$$f_4 = -c s_2$$

$$s_1 = s_2$$

$$f_3 = c s_2$$

$$f_2 = -c s_2$$

$$f_5 = c s_2$$

$$\begin{aligned} \dot{s}_2 &= v \\ \ddot{v} &= -\frac{c}{m} s_2 \end{aligned}$$

Ableiten der 1. Gl.

$$\begin{aligned} \ddot{s}_2 &= \ddot{v} = -\frac{c}{m} s_2 \\ \ddot{s}_2 + \frac{c}{m} s_2 &= 0 \end{aligned}$$