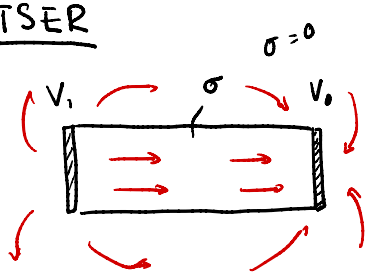
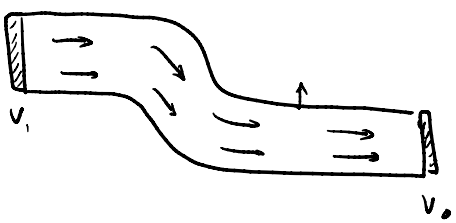
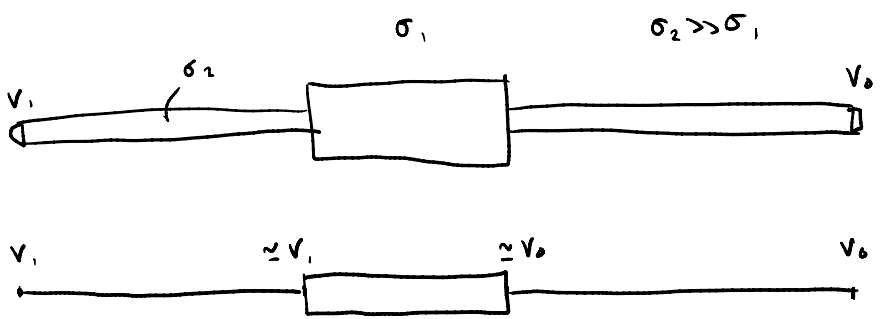
KRETSER

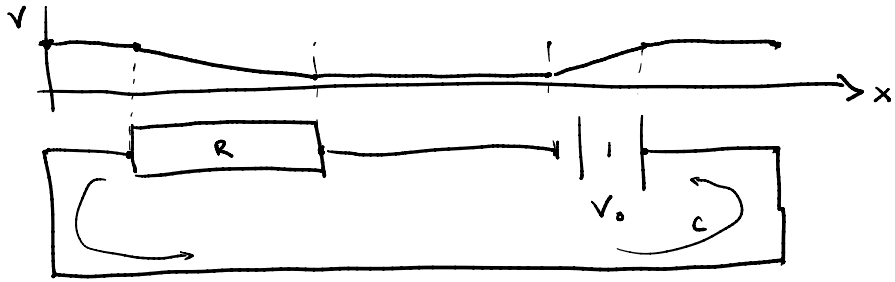


$\vec{j} = \sigma \vec{E}$

L_2 { ∅ ingen strøm
σ strøm

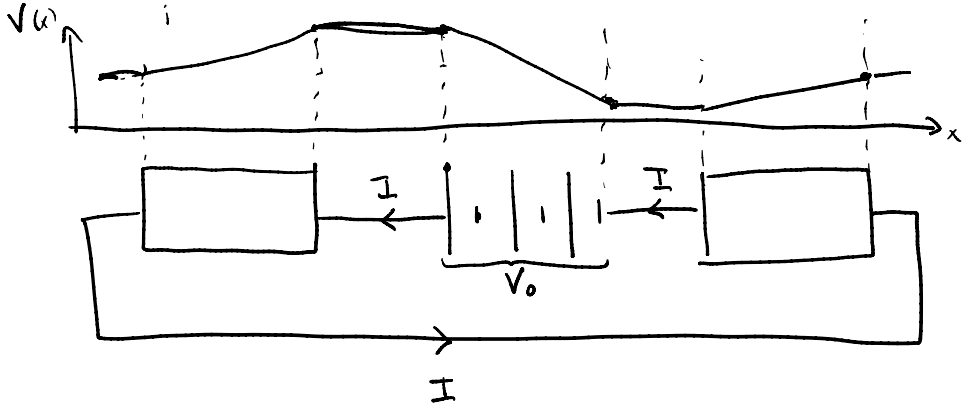






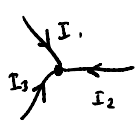
Kirchoffs spenningslov: $\oint_C \vec{E} \cdot d\vec{l} = 0$

$$\sum_i \Delta V_i = 0$$



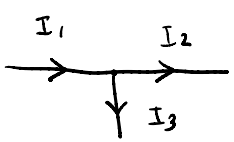
Kirchoffs spenningslov: $\sum_{i,C} \Delta V_i = 0 \Leftarrow \oint_C \vec{E} \cdot d\vec{l} = 0$

Kirchoffs strømlov



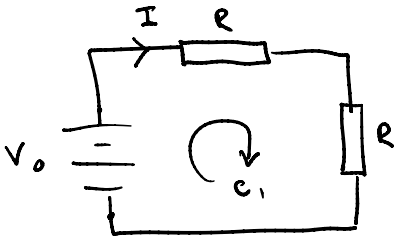
$\sum_{inn} I_i = 0 \Leftarrow \nabla \cdot \vec{j} = 0$

$$\sum_{inn} I_i = I_1 - I_2 - I_3 = 0$$



TEST

a) Kirchoffs spenningslov ?



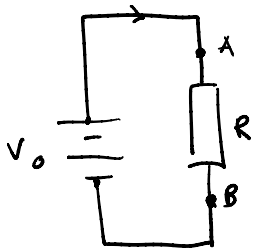
$+V_0 - RI - RI = 0$

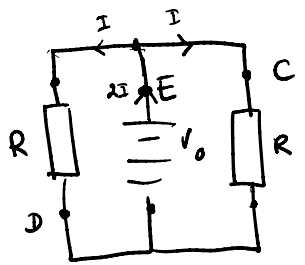
TEST

a) Ranger

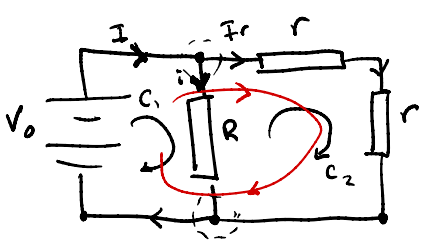
$I_{A,B,C,D}$

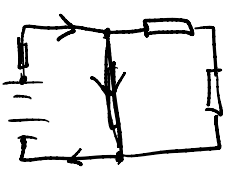
b) Ranger $V_{A,B,C,D}$





Kretsanalyse





KSL: C_1

$V_0 - -iR = 0 \quad \Rightarrow \quad i = V_0/R$

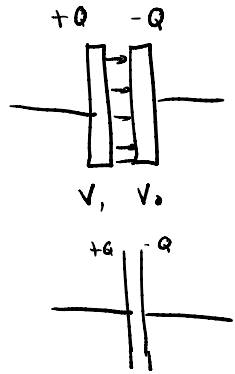
KSL C_2: $-I_r r - I_r r + iR = 0 \quad I_r = i\,\frac{R}{2r} = \frac{V_0}{2r}$

Kondensator i kets

$$C = \frac{Q}{V}$$

$$Q = CV$$

$$V = \frac{1}{C} Q$$



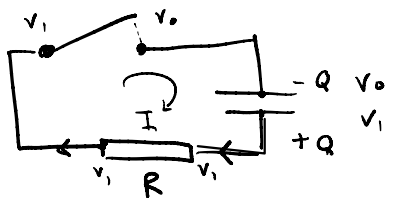
TEST

$$I = -\frac{dQ}{dt}$$

KSL:

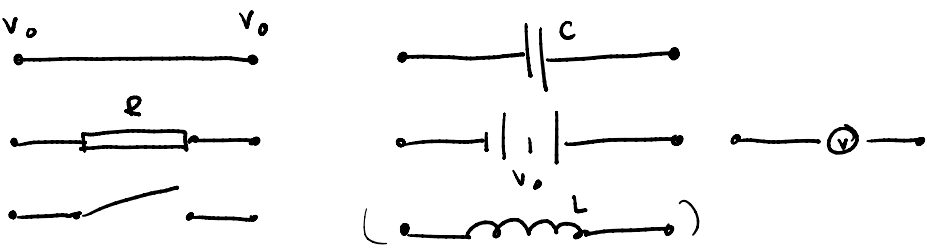
$$\frac{1}{C} Q - IR = 0$$

$$\frac{1}{C} Q + R \frac{dQ}{dt} = 0 \quad \Rightarrow \quad \frac{dQ}{dt} = -\frac{1}{RC} Q$$

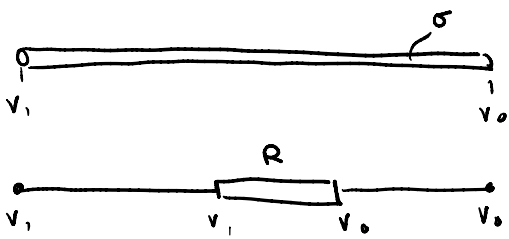


$$\oint_C \vec{E} \cdot d\vec{L} = 0$$

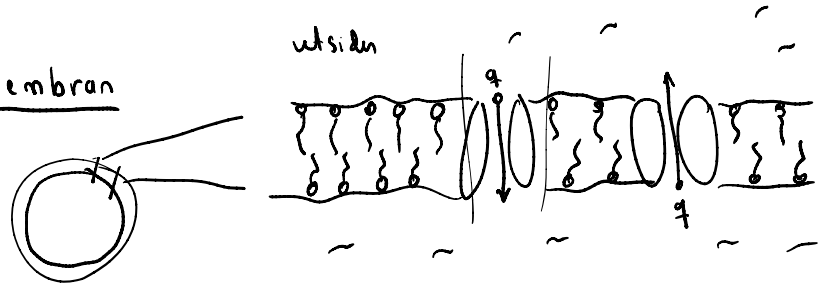
Komponenter

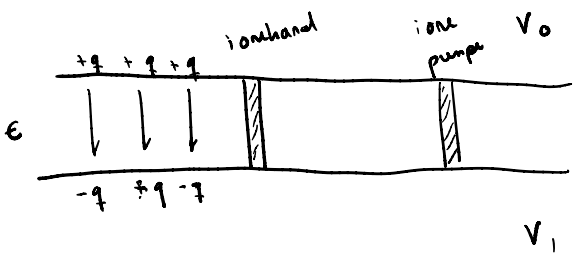


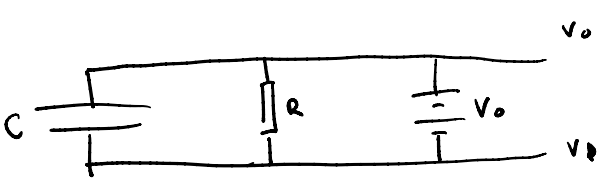
Modellering

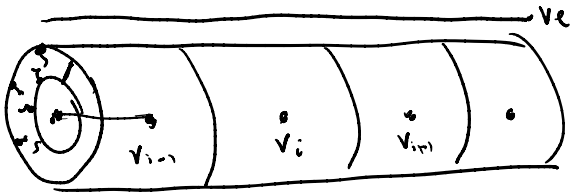


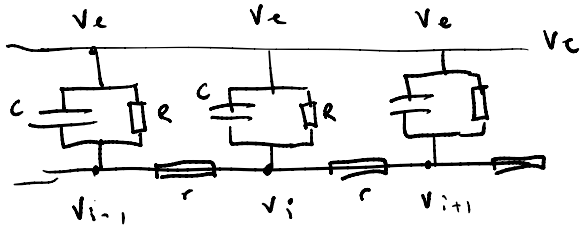
Cellemembran








Ve
Vi-1
Vi
Vi+1


Ve
Ve
Ve
Ve
C
R
C
R
r
r
Vi-1
Vi
Vi+1