

Filtere

- Stoff fra kompendiet og labøvelse 1

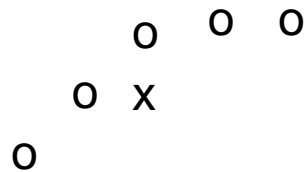
Konvulusjons filtere

Forholder seg kun til datasettet



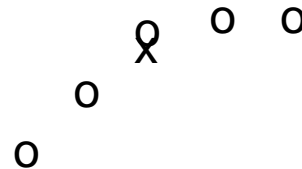
$$y(n) = \sum_{k=-K}^K c(k) u(n-k)$$

NB! "Fremtid"



$$\{1, 1, 1, 1, 1\} / 5$$

Nabo midling (5 punkts)

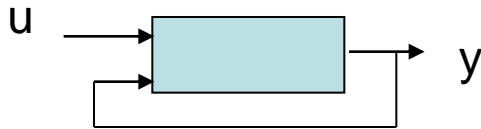


$$\{-3, 12, 17, 12, -3\} / 35$$

Savitzky-Golay

Rekursive filtere

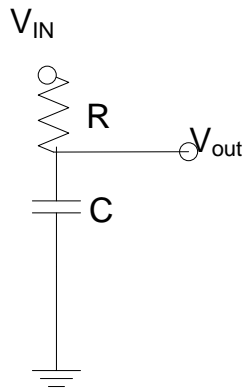
- Forholder seg til både datasettet (inngangssignalet) og tidligere verdier av det filtrerte datasettet (utgangssignalet)



$$y(n) = \sum_{k=0}^K c(k) u(n-k) + \sum_{k=0}^K d(k) y(n-k)$$

Eksempel: Digitalt lavpassfilter

Analogt lavpassfilter



$$V_{out}(t) + RC \frac{dV_{out}(t)}{dt} = V_{in}(t)$$

Digital beskrivelse:

$$\frac{dV_{out}}{dt} = (V_{out}(n) - V_{out}(n-1)) / S$$

Sampling
intervall

$$V_{out}(n) = bV_{out}(n-1) + (1-b)V_{in}(n)$$

RC

$$b = \frac{T/S}{1 + T/S}$$