http://www.biyoklinikder.org/TIPTEKNO20_Bildiriler/068.pdf

https://www.mathworks.com/help/signal/ref/sos2tf.html

https://www.ling.upenn.edu/courses/ling525/filters1.html

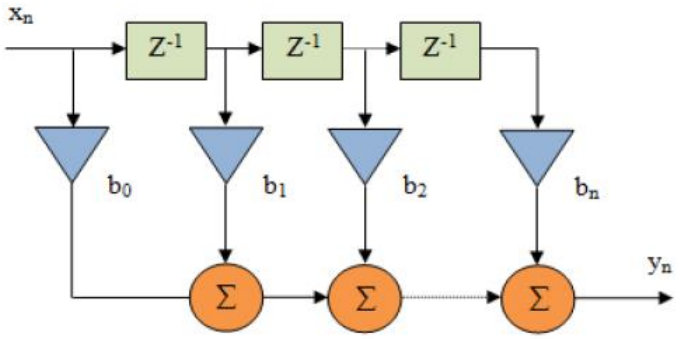


Fig. 1. FIR filter block diagram

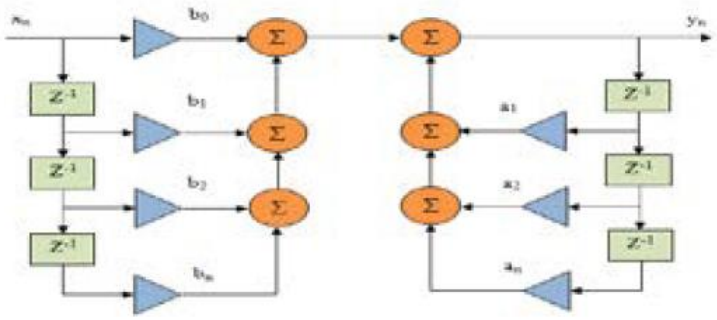
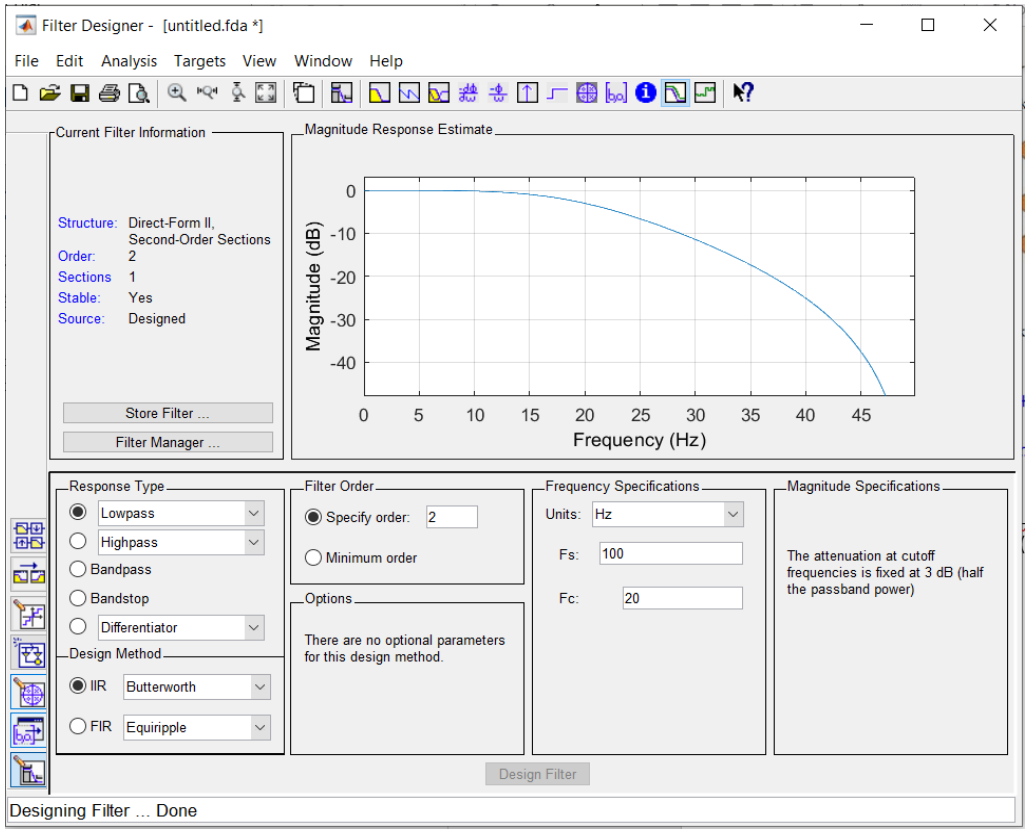
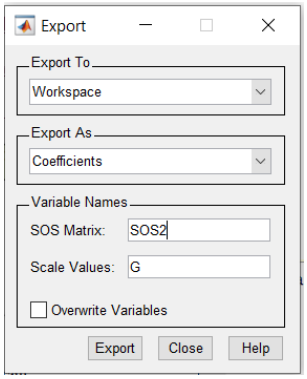


Fig. 2. IIR filter block diagram






```
>> [b,a]=sos2tf(SOS2)

b =

     1     2     1


a =

    1.0000   -0.3695    0.1958
```

$$a(1)*y(n) + a(2)*y(n-1) + \ldots + a(Na+1)*y(n-Na) = b(1)*x(n) + b(2)*x(n-1) + \ldots + b(Nb+1)*x(n-Nb)$$

Queremos colocar y(n) = ____ ,

Por isso é preciso passer tudo o que está do lado esquerdo desta equação para a direita. (atenção a trocar sinais e se necessário dividir tudo por a(1).

```
out(i)= 1*InputSignal(i)+ 2*InputSignal(i-1)+
1*InputSignal(i-2) + 0.3695*out(i-1) - 0.1958*out(i-2);
```