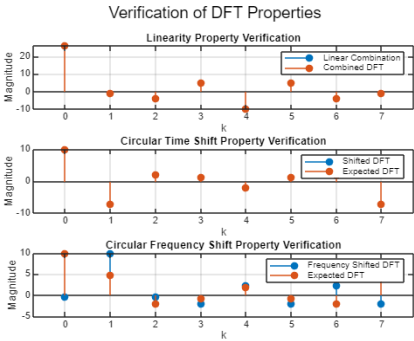
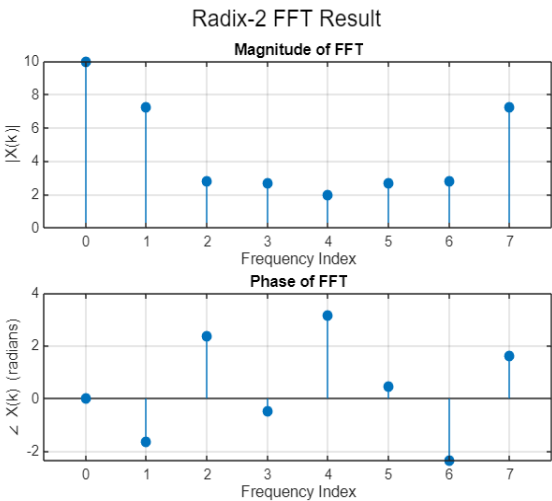


Linearity Verification:  
DFT of linear combination:  
26.0000 + 0.0000i -0.8284 -18.7279i -4.0000 + 4.0000i 4.8284 - 6.7279i -10.0000 + 0.0000i 4.8284 + 6.7279i -4.0000 - 4.0000i -0.8284 +18.7279i  
Linear combination of DFTs:  
26.0000 + 0.0000i -0.8284 -18.7279i -4.0000 + 4.0000i 4.8284 - 6.7279i -10.0000 + 0.0000i 4.8284 + 6.7279i -4.0000 - 4.0000i -0.8284 +18.7279i  
Circular Time Shift Verification:  
DFT of shifted sequence:  
10.0000 + 0.0000i -7.2426 + 0.4142i 2.0000 - 2.0000i 1.2426 + 2.4142i -2.0000 + 0.0000i 1.2426 - 2.4142i 2.0000 + 2.0000i -7.2426 - 0.4142i  
Expected result:  
10.0000 + 0.0000i -7.2426 + 0.4142i 2.0000 - 2.0000i 1.2426 + 2.4142i -2.0000 - 0.0000i 1.2426 - 2.4142i 2.0000 + 2.0000i -7.2426 - 0.4142i  
  
Circular Frequency Shift Verification:  
DFT of frequency shifted sequence:  
-0.4142 + 7.2426i 10.0000 + 0.0000i -0.4142 - 7.2426i -2.0000 + 2.0000i 2.4142 - 1.2426i -2.0000 + 0.0000i 2.4142 + 1.2426i -2.0000 - 2.0000i  
Expected result:  
10.0000 + 0.0000i 4.8284 - 5.4142i -2.0000 - 2.0000i -0.8284 + 2.5858i 2.0000 - 0.0000i -0.8284 - 2.5858i -2.0000 + 2.0000i 4.8284 + 5.4142i



Expt 7

FFT Result:  
10.0000 + 0.0000i -0.4142 - 7.2426i -2.0000 + 2.0000i 2.4142 - 1.2426i -2.0000 + 0.0000i 2.4142 + 1.2426i -2.0000 - 2.0000i -0.4142 + 7.2426i



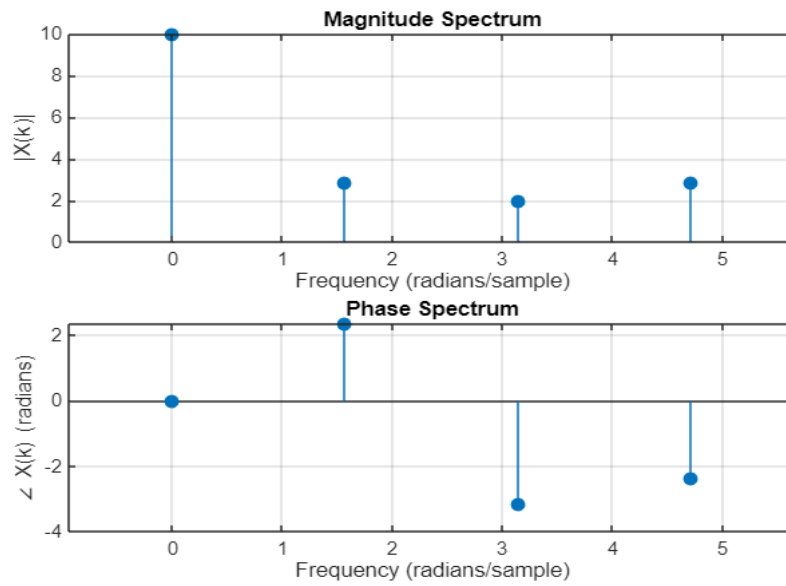
Expt 8

N = 3

Circular Convolution Result:  
3.5000 2.0000 3.5000  
Linear Convolution Result:  
0.5000 2.0000 3.5000 3.0000

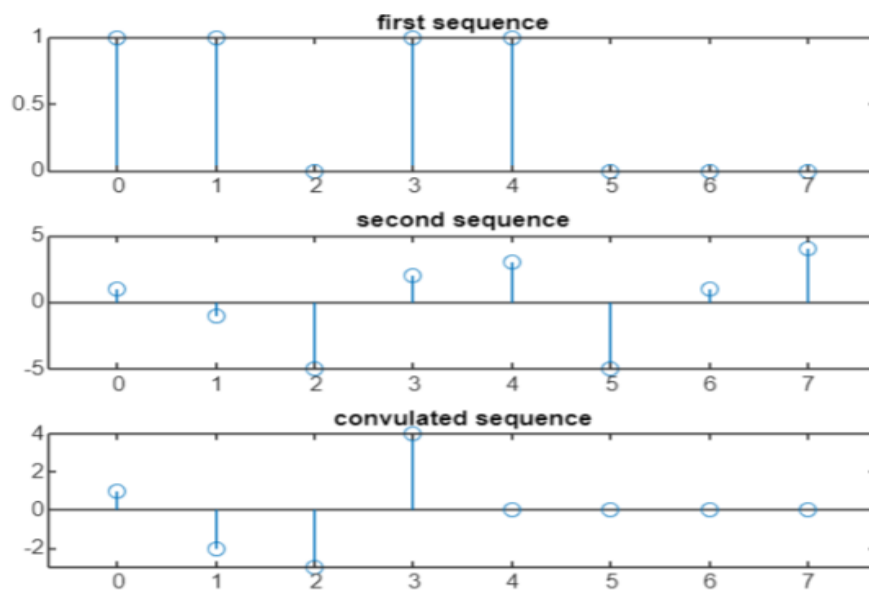
Expt 6

# N-point DFT of the Sequence



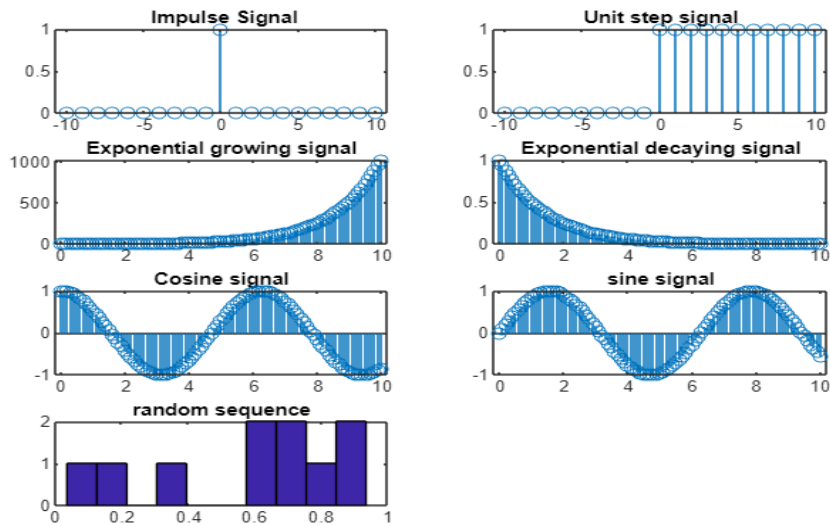
Expt 5

1   -1   -5   2   3   -5   1   4

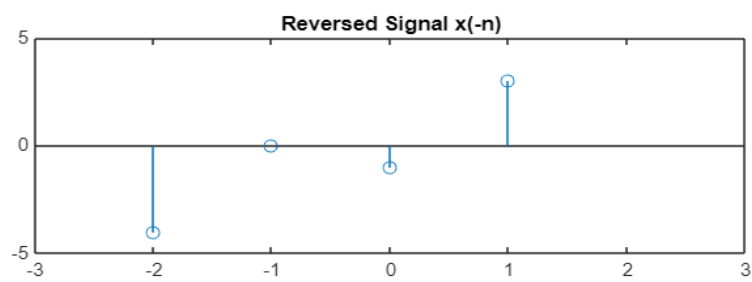
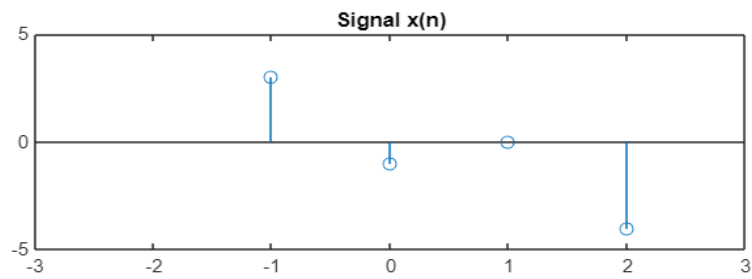


Expt 3

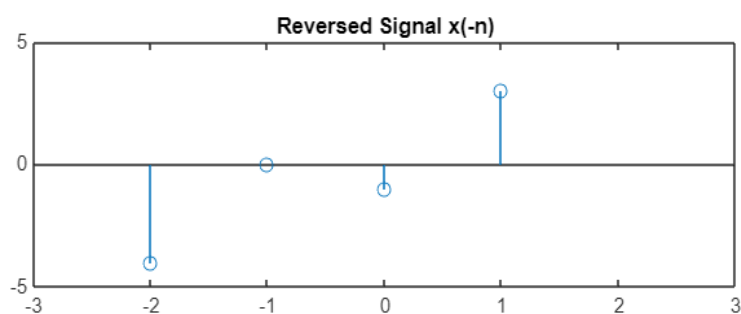
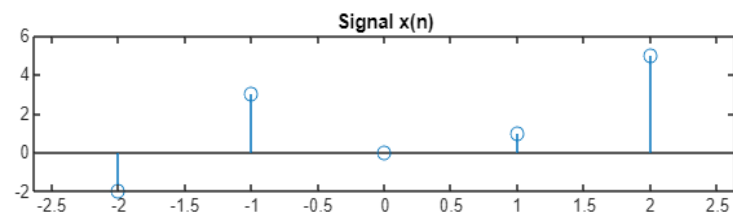
x8 = 1x10  
 0.6557    0.0357    0.8491    0.9340    0.6787    0.7577    0.7431 ...



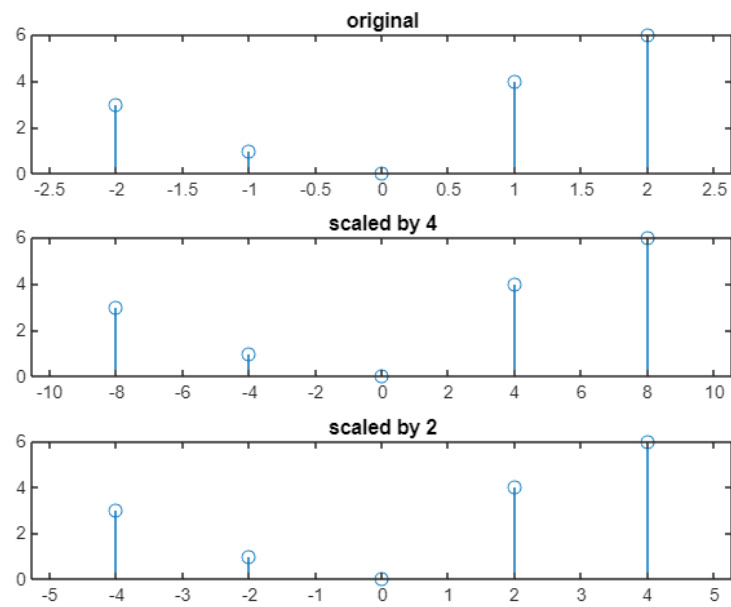
Expt 1



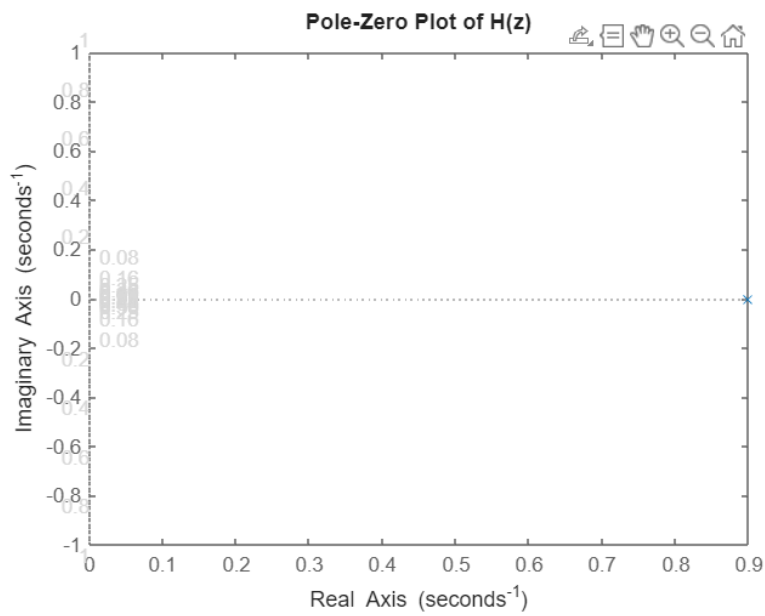
expt 2



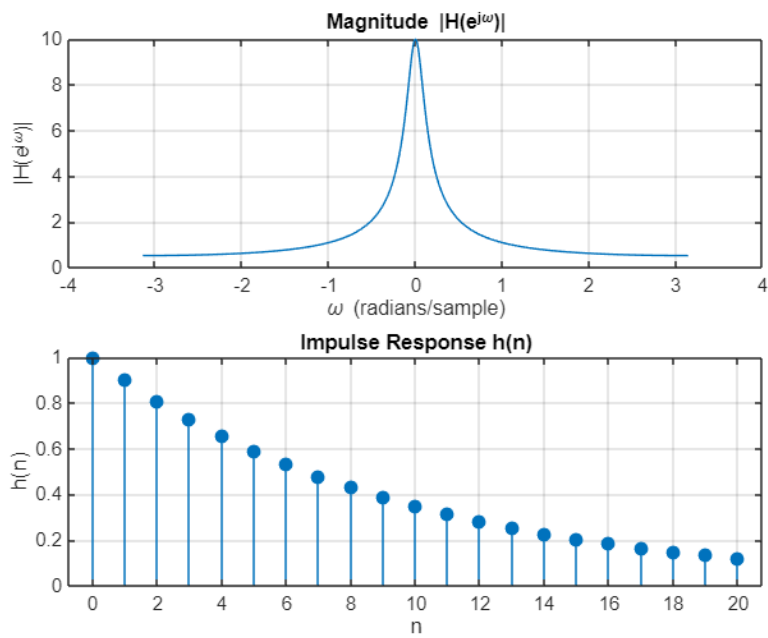
expt 2



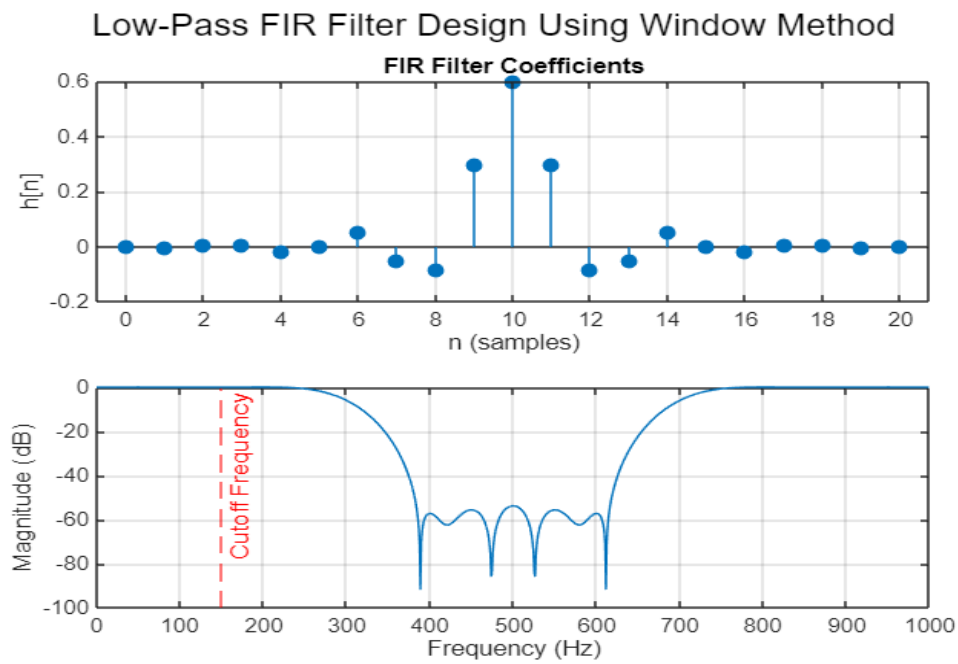
expt 2



Expt 4

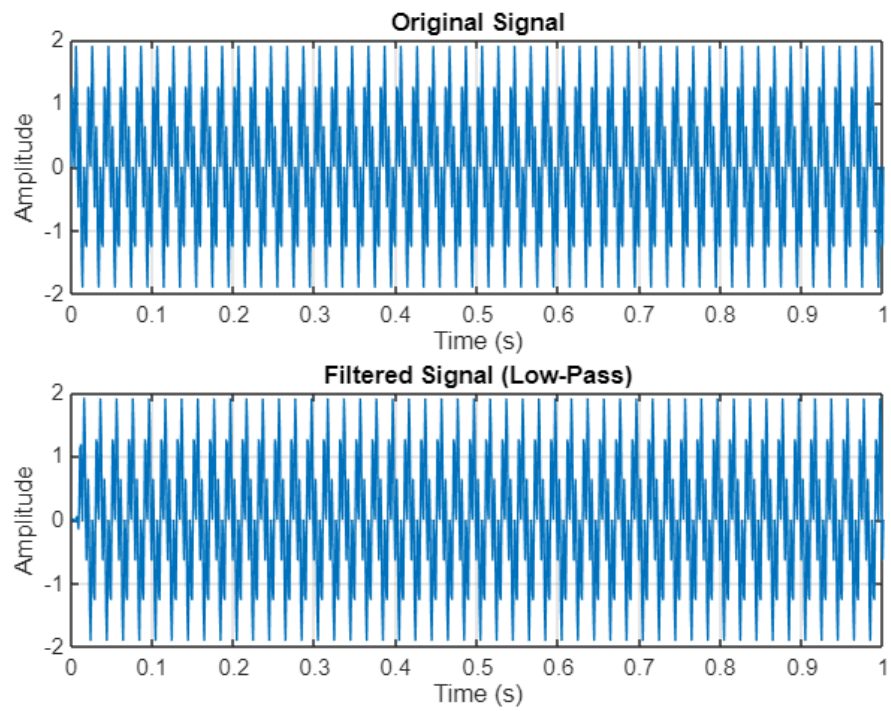


expt 4



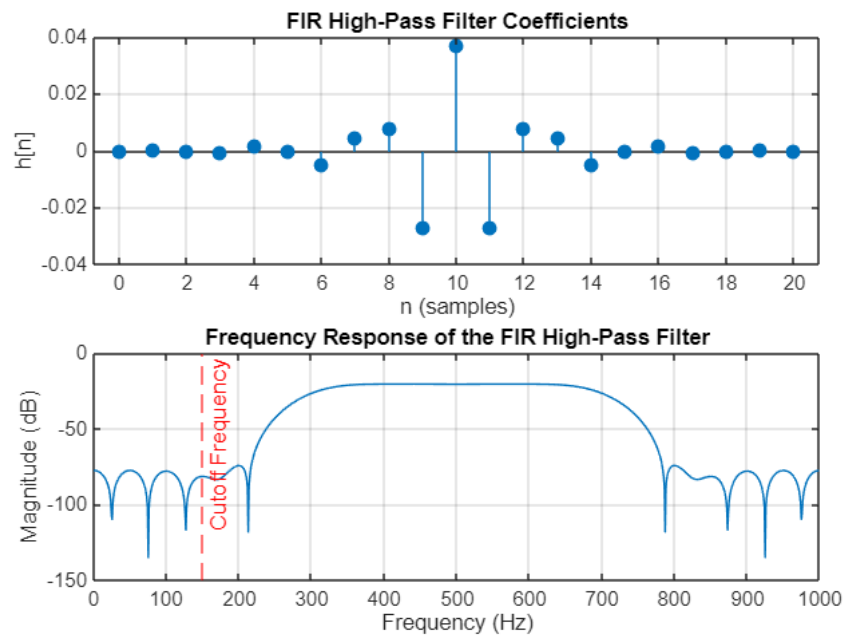
Expt 9

## Signal Filtering using FIR Low-Pass Filter



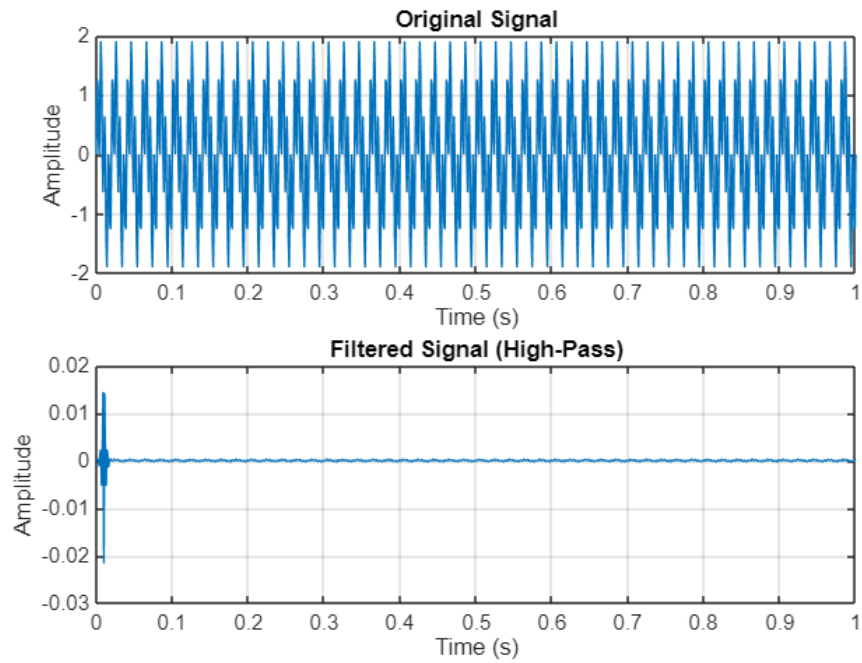
expt 9

## High-Pass FIR Filter Design Using Window Method



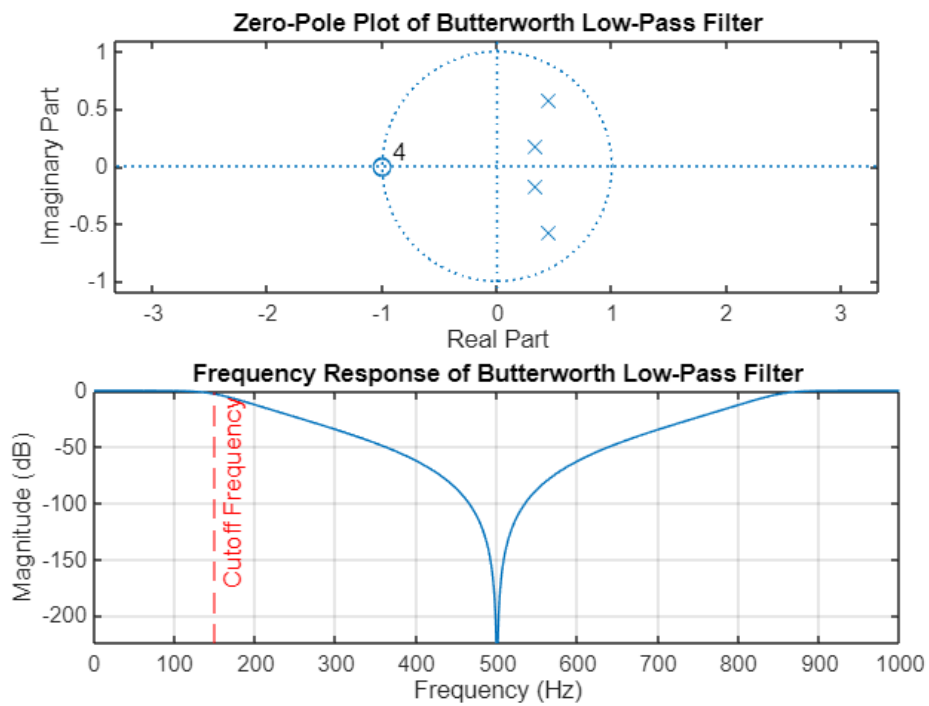
expt 10

## Signal Filtering using FIR High-Pass Filter



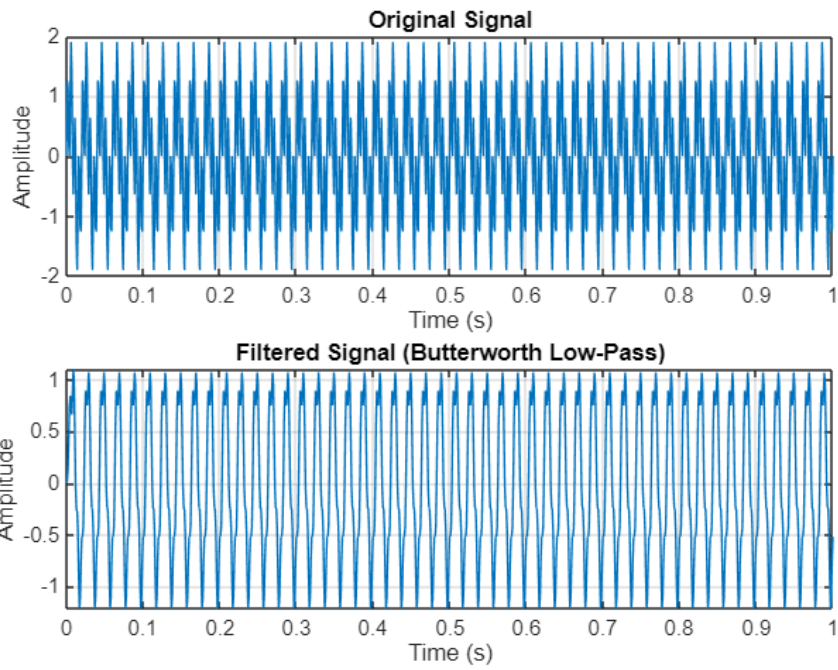
expt 10

## Butterworth Low-Pass Filter Design



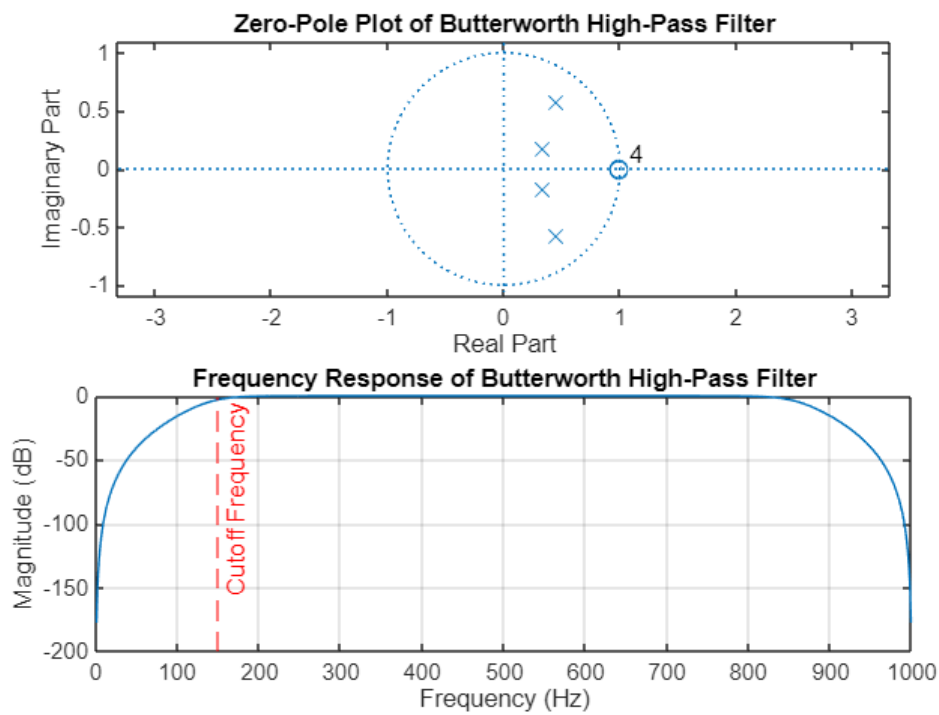
expt 11

## Signal Filtering using Butterworth Low-Pass Filter



expt 11

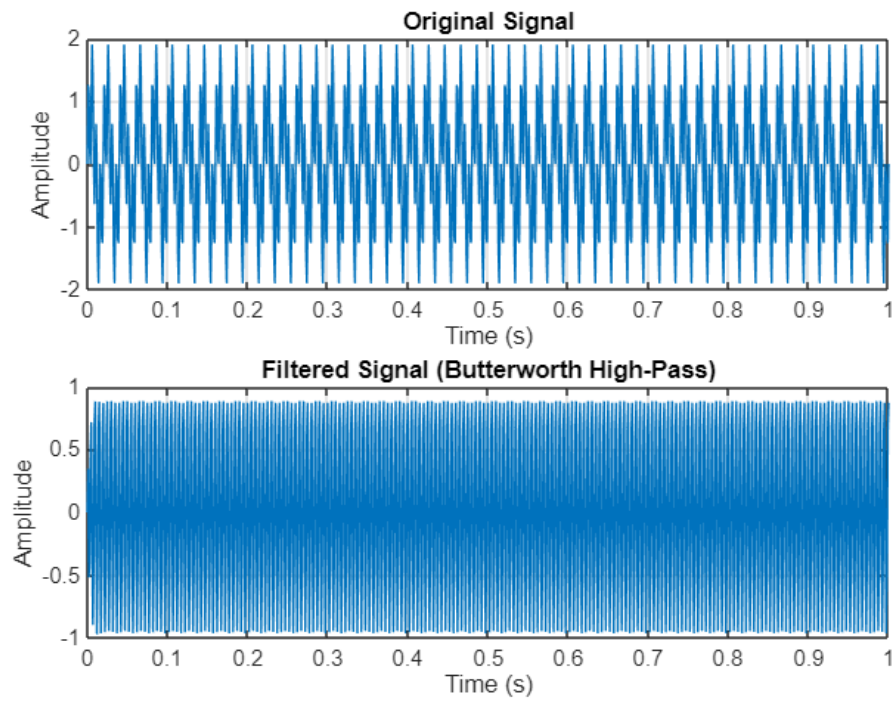
## Butterworth High-Pass Filter Design



expt 12



## Signal Filtering using Butterworth High-Pass Filter



expt 12