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**AIM**:

Design of FIR filters by HAMMING WINDOW:

Given: H(w)=1 for π/4 ≤ w ≤ π/4

H(w)=0 otherwise

**CODE:**

clc

clear all

N=31

n=-15:15

h=(1/4)\*sinc(n\*3.14/4)

w=0.54+0.46\*cos(2\*3.14\*n/(N-1))

*//whm = window('hm', N);*

figure(1)

plot2d3(n,h)

a=gca();

a.x\_location="origin"

a.y\_location="origin"

title('Impulse response of the Desired Filter')

xlabel('Discrete Time')

ylabel('Impulse Response')

figure(2)

plot2d3(n,w)

a=gca();

a.x\_location="origin"

a.y\_location="origin"

title('Hamming Window')

xlabel('Discrete Time')

ylabel('Amplitude')

figure(3)

x=w.\*h

plot2d3(n,x)

a=gca();

a.x\_location="origin"

a.y\_location="origin"

title('Impulse response of the Designed Filter')

xlabel('Discrete Time')

ylabel('Amplitude')

figure(4)

[xm,fr]=frmag(x,256)

plot(fr,xm)

a=gca();

title('Frequency response of the Designed Filter')

xlabel('Discrete Frequency')

ylabel('Amplitude')

**OUTPUT:** 





