Plot DTFT

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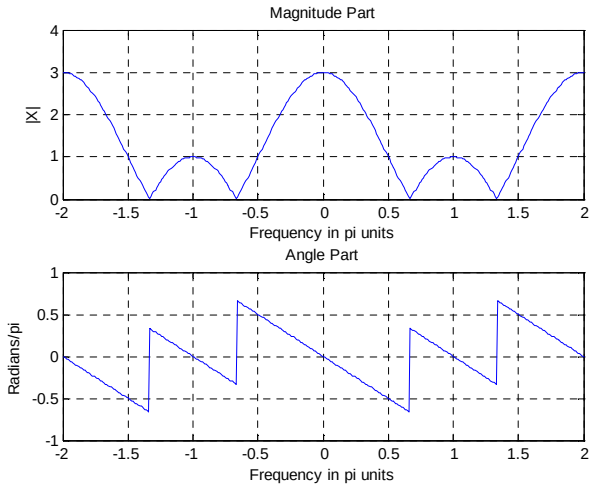
```
function [magX,angX,w] = plot_dtft(b,a)
% DTFT computes the magnitude and phase responses(spectra) for a filter(signal)
% for digital frequencies between -2*pi ~ 2*pi radians.
%
% [MAG, PHASE, W] = plot_dtft(B,A);
% produces the dtft of the filter defined by the coefficients B and A.
%
% Chun-Tang Chao, 2008. 5. 5
% Ref: [1] "Digital Signal System with Matlab," Ingle and Proakis, Thomson Learning, 2000.
%      [2] "Fundamentals of Digital Signal Processing," Joyce Van de Vegte , Prentice Hall, 2002.

w=-2*pi: pi/100:2*pi;                % -2*pi ~ 2*pi 間，取 401 points
k= -200:200;
nb=0:length(b)-1; na=0:length(a)-1;
Xb=b*exp(-j*nb'*w);       % Xb=b*(exp(-j*pi/100)).^(nb'*k);
if a==1
    X=Xb;
    else
        Xa=a*exp(-j*na'*w);       % Xa=a*(exp(-j*pi/100)).^(na'*k);
         X=Xb./Xa;
end
magX = abs(X); angX = angle(X);
subplot(2,1,1); plot(w/pi,magX);grid
xlabel('Frequency in pi units'); ylabel('|X|'); title('Magnitude Part')
subplot(2,1,2); plot(w/pi,angX/pi);grid
xlabel('Frequency in pi units'); ylabel('Radians/pi');title('Angle Part')
```

>> [magX,angX,w] = plot_dtft([1 1 1],[1]);



>> [magX,angX,w] = plot_dtft([1 -1],[1]);