**m file:**

function plot\_imf(x,t,imf)

s = size(imf);

k = s(1);

figure;

for j = 1:k-1

subplot(k,1,j)

plot(t,imf(j,:))

ylabel(['imf',int2str(j)])

end

subplot(k,1,1)

title('Empirical Mode Decomposition')

subplot(k,1,k)

plot(t,imf(k,:),'r')

ylabel('res.')

xlabel('t/s')

end

**code:**

clear all;  
clc;

fs=100;  
N=2571;  
n=0:N-1;  
t=n/fs;  
  
x= [];  
imf=emd(x);  
figure,plot(t,x);xlabel('depth/m');ylabel('Amplitude');  
nfft= 2^nextpow2(length(t));   
ff=fs\*(0:nfft/2-1)/nfft;   
fftx=fft(x,nfft);   
ps=fftx.\*conj(fftx)/nfft;   
figure;  
subplot(211),plot(ff,abs(fftx(1:nfft/2))\*2/nfft);ylabel('Amplitude');xlabel('Frequency');title('FFT Spectrum');  
subplot(212),plot(ff,ps(1:nfft/2));ylabel('Spectral density');xlabel('Frequency');title('power spectrum');  
plot\_imf(x,t,imf);