```
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% Year: 2022
% Version: 2.0
% Reference: Empirical Fourier decomposition: An accurate signal decomposition method
% for nonlinear and non-stationary time series analysis
% https://doi.org/10.1016/j.ymssp.2021.108155
% ========================================================================
```

TFR Results

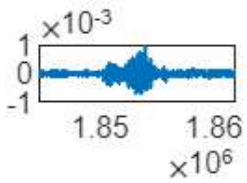
```
clear; clc; close all
set(0,'defaultlinelinewidth',1)
%T = 1;          % total time
fs = 2000;      % sample frequency
%t = (0:1/fs:T); % time step
%f31 = 1./(1.2+cos(2*pi*t));
%f12 = 2*cos(8*pi*t);
%f32 = cos(32*pi*t+0.2*cos(64*pi*t))./(1.2+sin(2*pi*t));
sig3 = readtable('exa.csv');
% plot
figure
x = sig3{:, 1};
y = sig3{:, 2};
plot(x, y)
```

TFR Results

```
load('ewtexample.mat');
%ff = [f1;f2];
for i = 1:10

    [inst_fre(i,:), inst_amp(i,:)] = IFIA(emptyCell{i},fs);
    %[inst_fre_ben(i,:), inst_amp_ben(i,:)] = IFIA(ff(i,:),fs);
end

[nt,tscale,fscale] = Plot_TFR(inst_fre(:,1:100)',inst_amp(:,1:end)',length(x)); % magnitude value
q = fspecial('gaussian',7,0.6);
nsu = filter2(q,nt);
nsu = filter2(q,nsu);
colormap(gray(256));
```




```
%figure; imagesc(tscale,fscale,nsu.^.5); colorbar; axis xy;
figure; imagesc(tscale,fscale,nsu.^.5); axis xy;
colormap(gray);

xlabel('Sampling Points'); ylabel('Frequency (Hz)'); title('TFR by EFD')
```


```
%ff = [f1;f2];
```