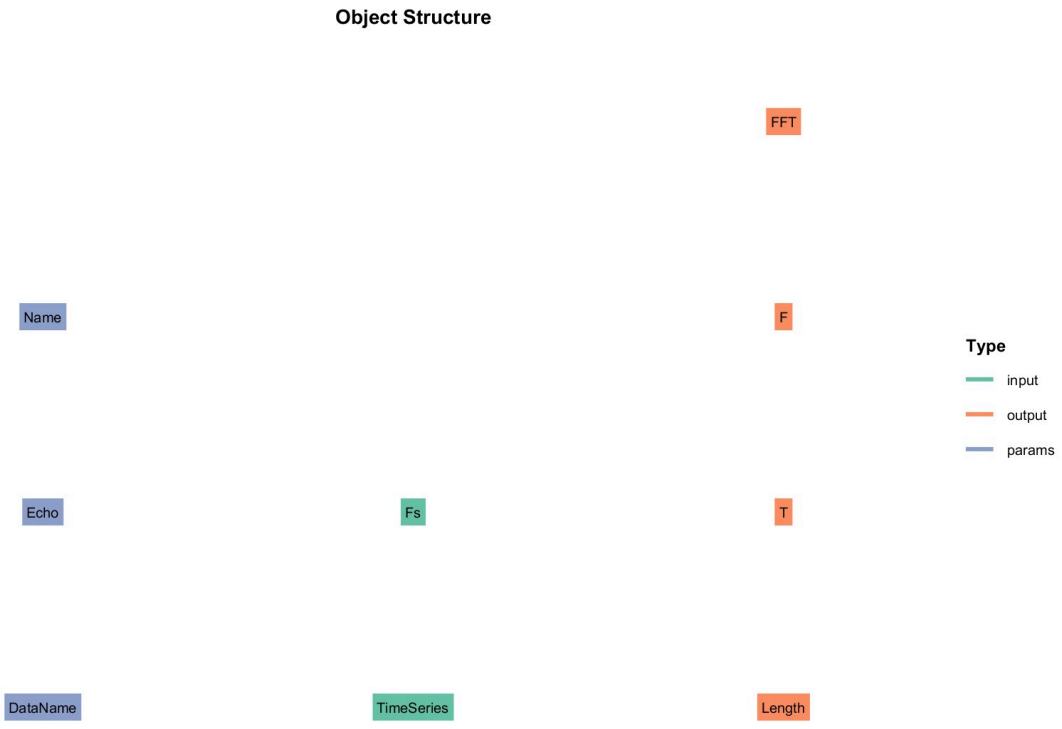
SignalAnalysis

Xie Yu

1 介绍

SignalAnalysis用于信号分析和处理。

2 类结构



输入 input：

- Fs : 采样频率
- TimeSeries : 时间序列

参数 params:

- Name： 名称
- DataName : 数据名称

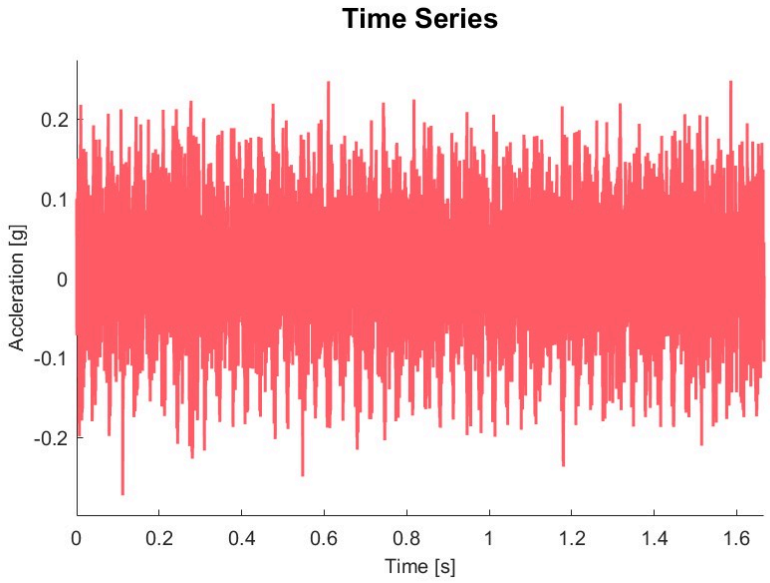
输出 output :

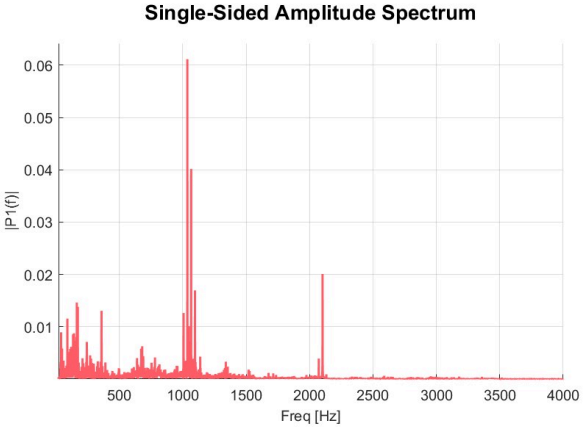
- FFT : 傅里叶变换计算结果
- F : 频率
- T : 时间
- Length： 数据长度

3 案例

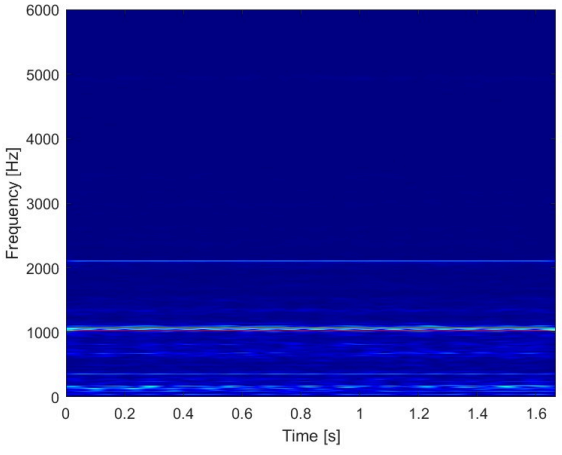
3.1 Do the analysis based on the bearing tests data (Flag=1)

```
data=load('97.mat');
Start=1;
DataNum=20000;
x=data.X097_DE_time(Start:Start+DataNum,:);
inputSignal.TimeSeries=x;
inputSignal.Fs=12000;
paramsSignal.DataName='Accleration [g]';
Signal=method.SignalAnalysis( paramsSignal, inputSignal);
Signal=Signal.solve();
PlotTimeSeries(Signal)
PlotFFT(Signal,'Freq',[20,4000])
PlotTET(Signal,3000);
PlotSST(Signal,2000);
PlotWT(Signal,2000);
```

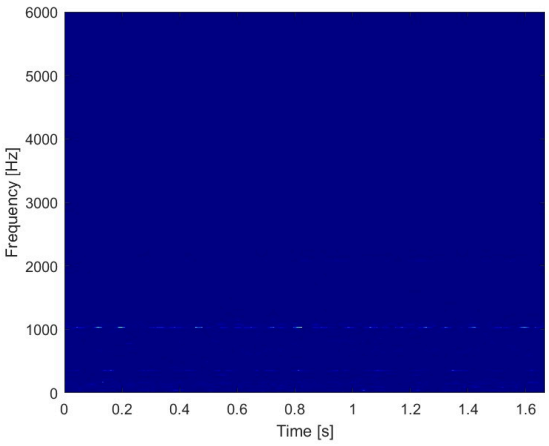




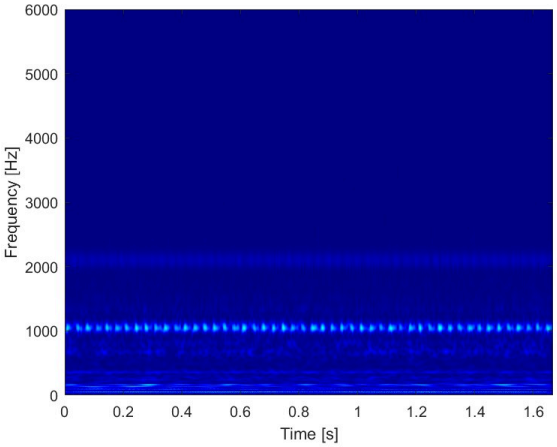
FFT



TET



SST



WT

4 参考文献

[1] A Concentrated Time–Frequency Analysis Tool for Bearing Fault Diagnosis

[2] Second-order transient-extracting transform for the analysis of impulsive-like signals