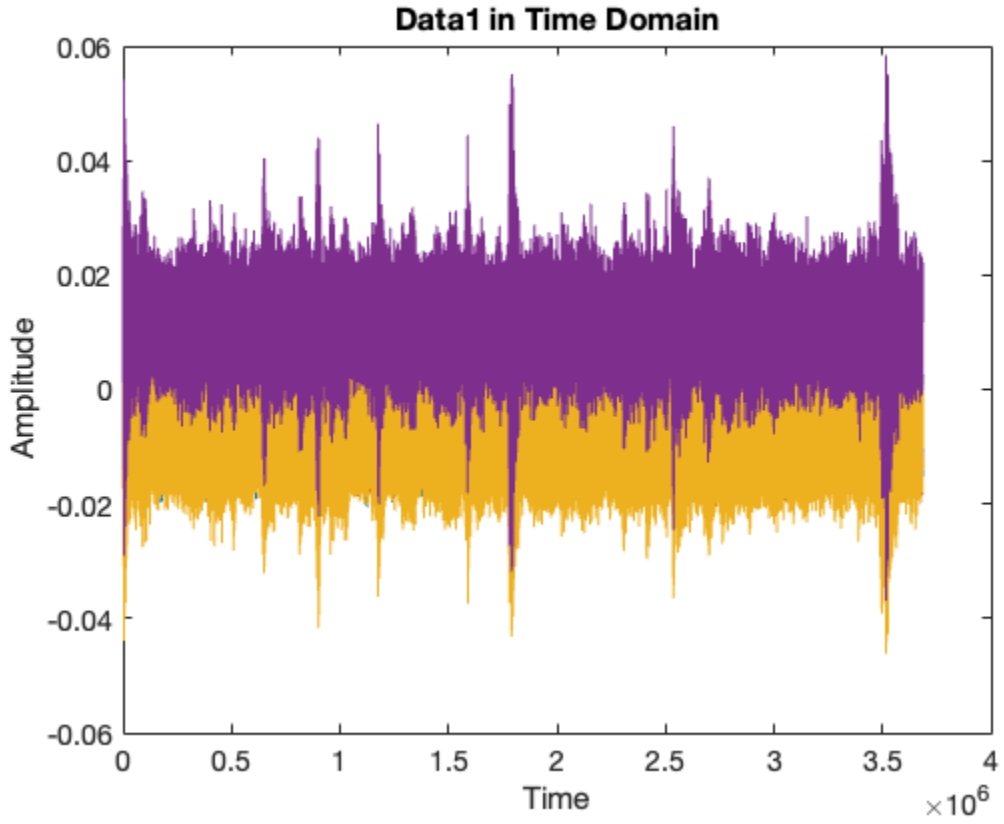
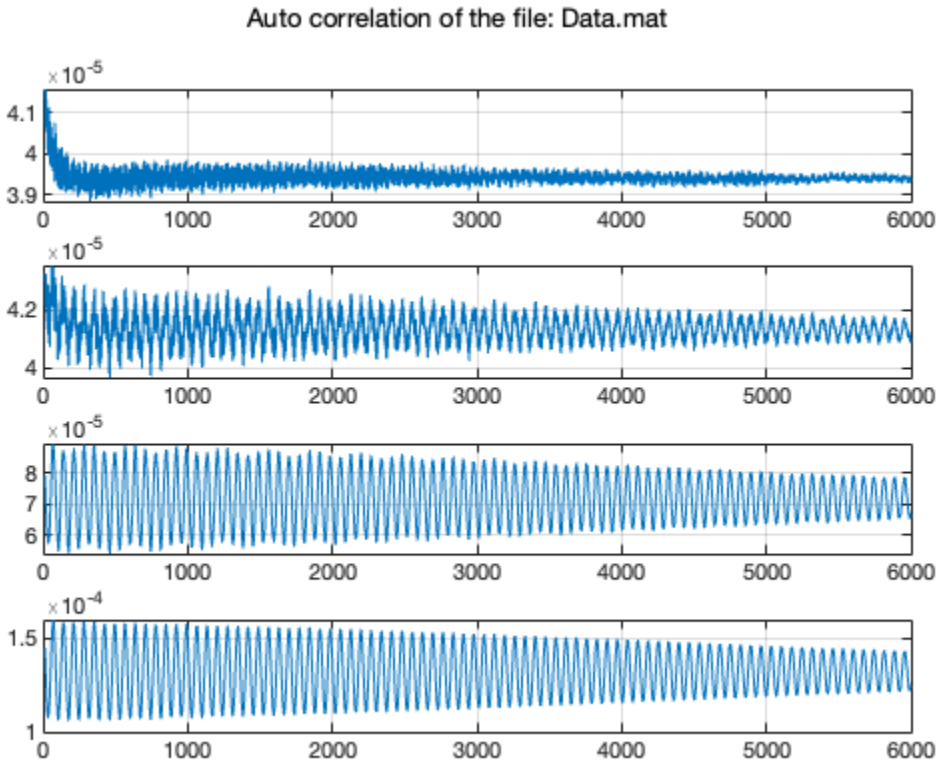
Table of Contents

Data1:Data.mat

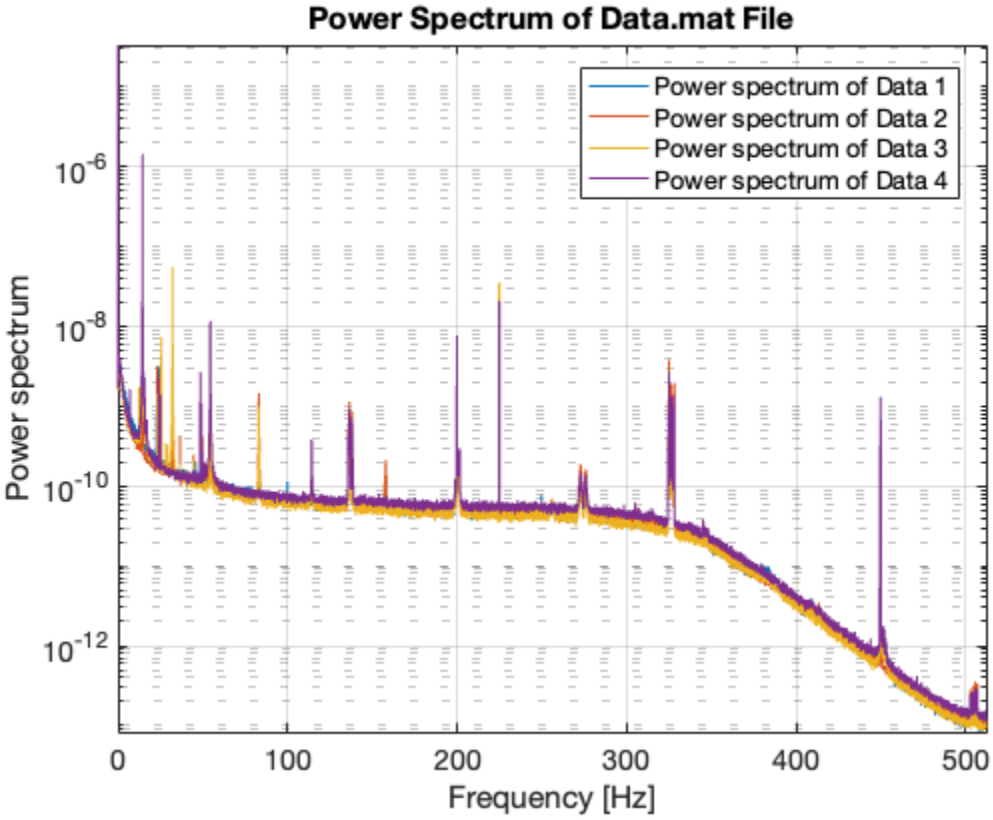


Auto and cross correlation matrix

Plotting the Auto_correlation



Plotting the PSD



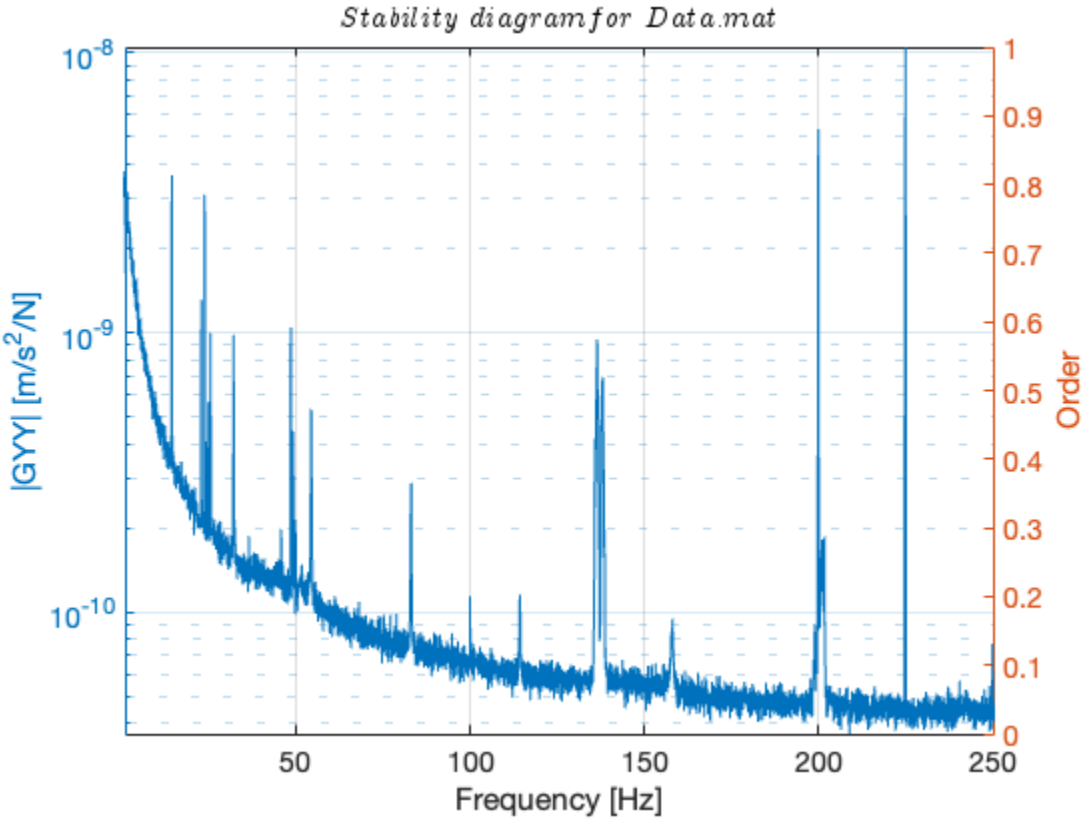
Main ITDM

```
Starting ITDM:
Doing it for the order of the sys:
```

Functions

Auto and cross correlation

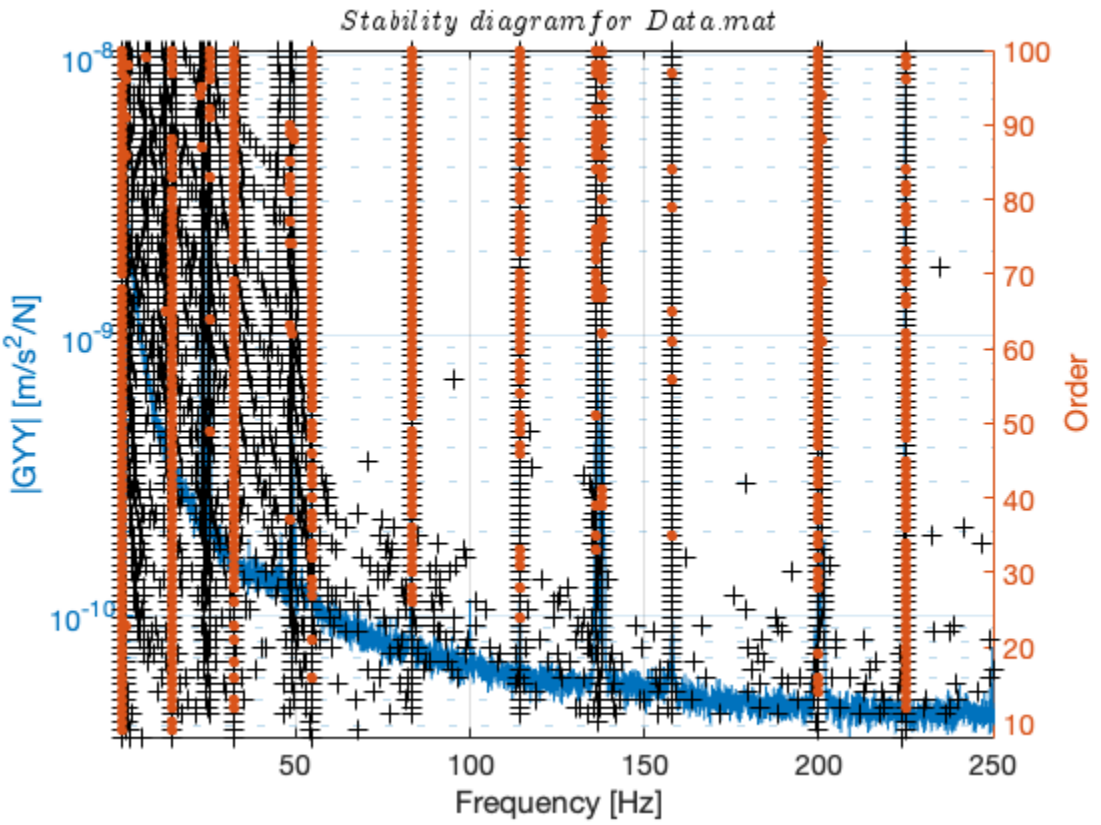
Plotting the power spectrum

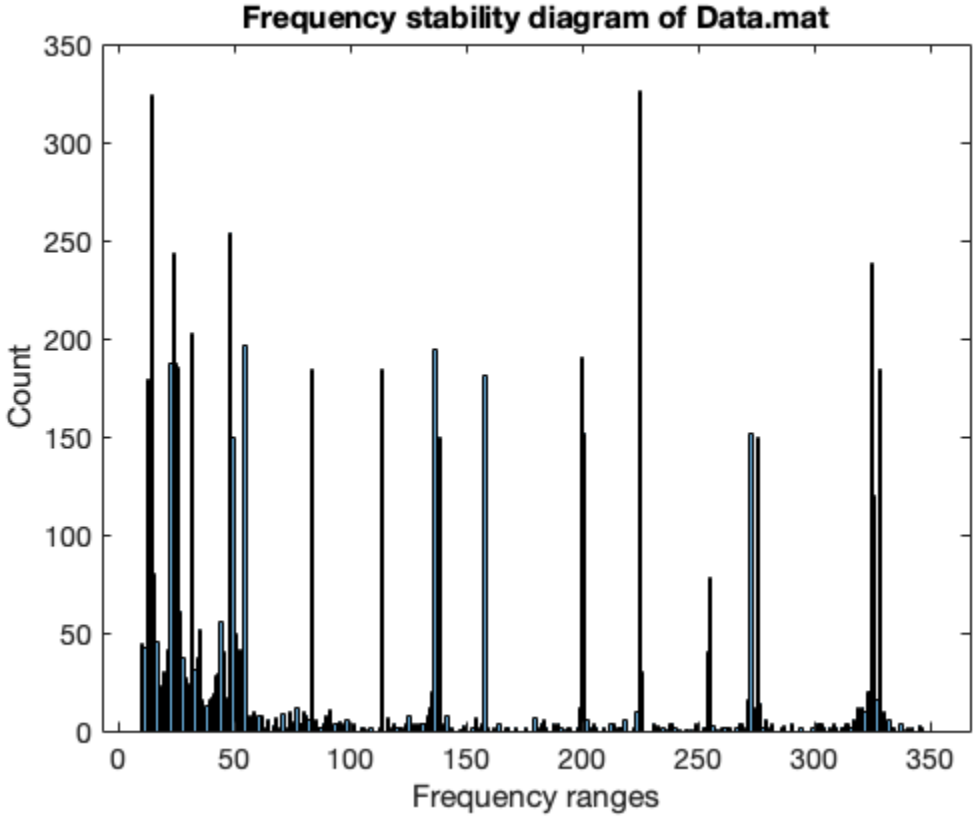


Ibrahim method function

```
N = 8
N = 10
N = 12
N = 14
N = 16
N = 18
N = 20
N = 22
N = 24
N = 26
N = 28
N = 30
N = 32
N = 34
N = 36
N = 38
```

```
N = 40
N = 42
N = 44
N = 46
N = 48
N = 50
N = 52
N = 54
N = 56
N = 58
N = 60
N = 62
N = 64
N = 66
N = 68
N = 70
N = 72
N = 74
N = 76
N = 78
N = 80
N = 82
N = 84
N = 86
N = 88
N = 90
N = 92
N = 94
N = 96
N = 98
N = 100
```

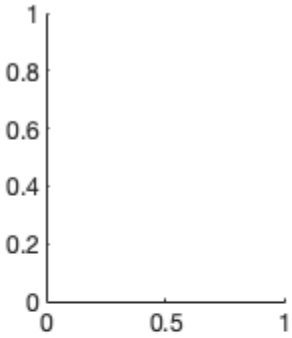

Stability diagram for Data.mat
|GYY| [m/s²/N]
Order
Frequency [Hz]
10⁻⁸
10⁻⁹
10⁻¹⁰
50
100
150
200
250
10
20
30
40
50
60
70
80
90
100


Frequency stability diagram of Data.mat
Count
Frequency ranges
0
50
100
150
200
250
300
350

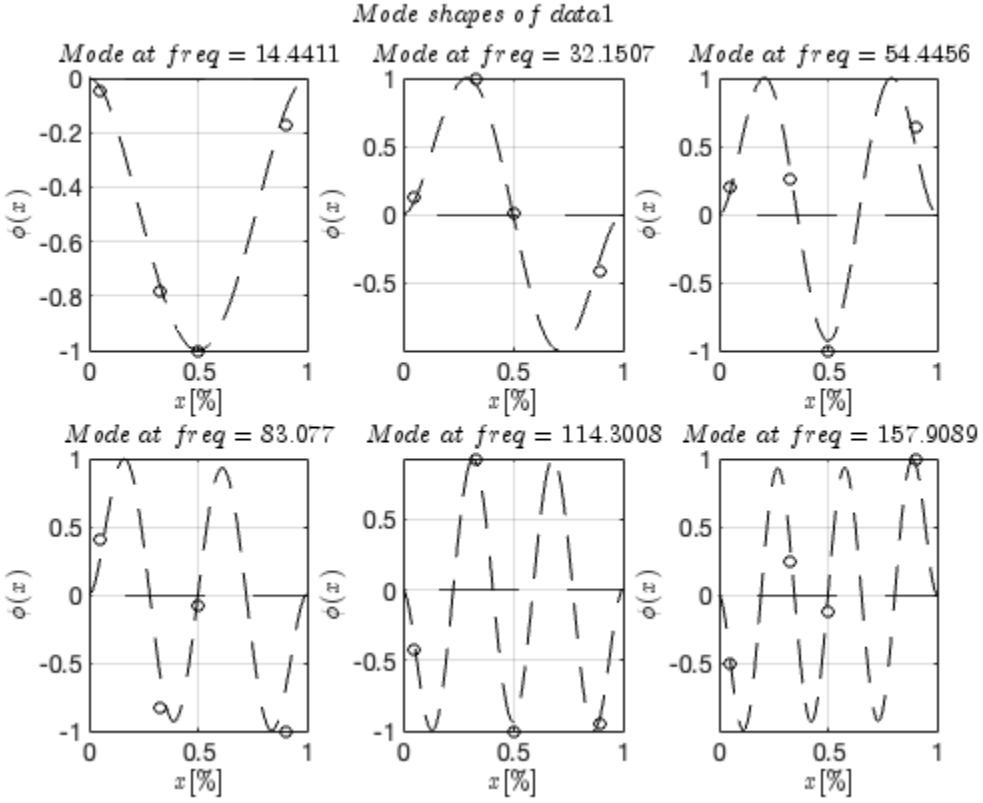
Stability analysis

```
The ranges of stable frequencies are:
14.4032 & 14.5056
32.1184 & 32.2208
54.4416 & 54.544
83.0112 & 83.1136
114.2432 & 114.3456
157.8656 & 157.968
```

splitting the time domain signal with windowing and overlapping



Complex to real mode shapes



Mode shape visualization

GUI to select the relevant parameters

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