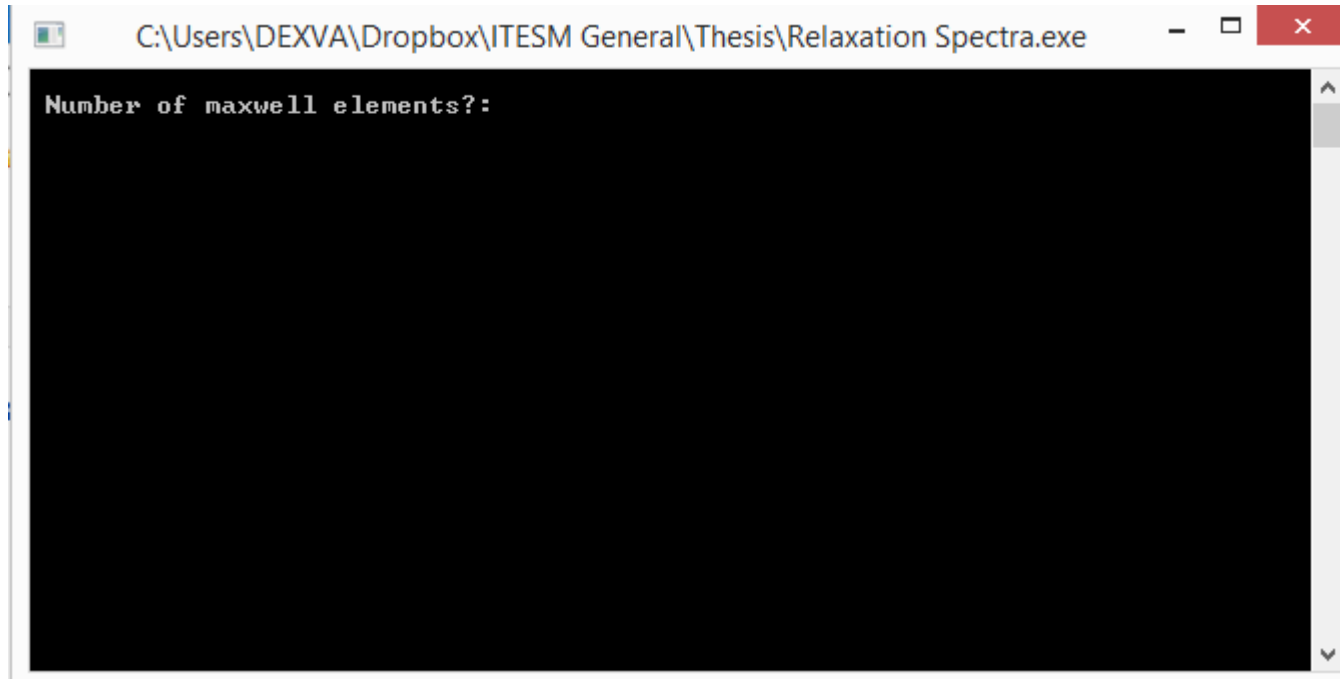
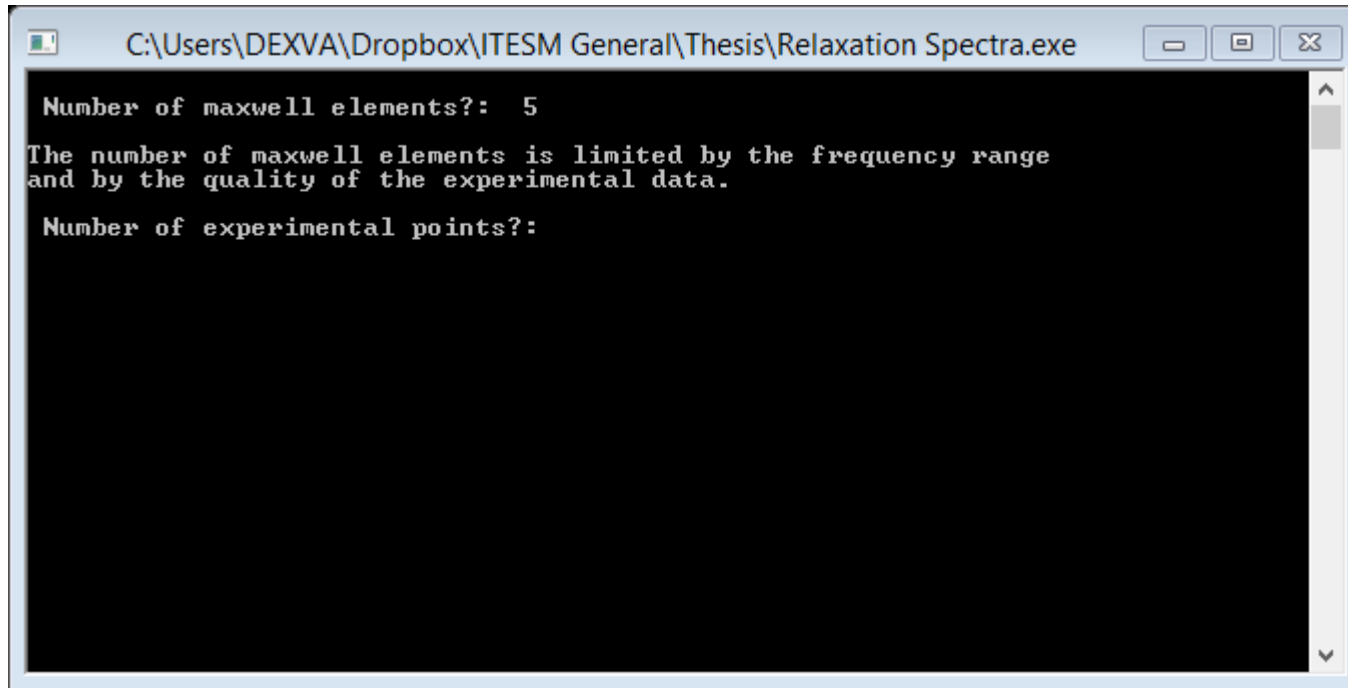


Discrete Relaxation Spectra

Introduce the number of Maxwell elements



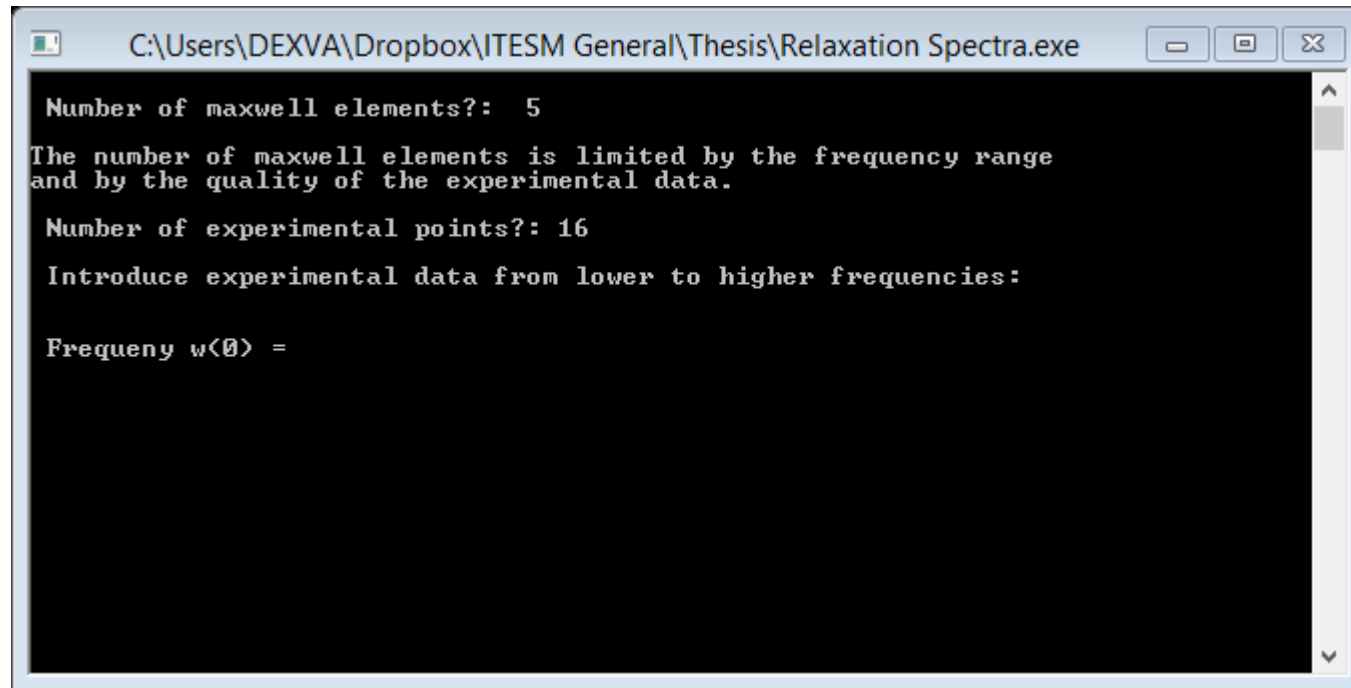
Introduce the number of experimental points



```
C:\Users\DEXVA\Dropbox\ITESM General\Thesis\Relaxation Spectra.exe

Number of maxwell elements?: 5
The number of maxwell elements is limited by the frequency range
and by the quality of the experimental data.
Number of experimental points?:
```

Introduce the point from smallest to largest ω [rad/s] and the G'' [Pa]



```
C:\Users\DEXVA\Dropbox\ITESM General\Thesis\Relaxation Spectra.exe

Number of maxwell elements?: 5

The number of maxwell elements is limited by the frequency range
and by the quality of the experimental data.

Number of experimental points?: 16

Introduce experimental data from lower to higher frequencies:

Frequency  $\omega(0)$  =
```

Once you finished, a Discrete Relaxation Spectra will be shown

- EXAMPLE: Diluted polymer solution of SU-8:PEO:TBATFB at 99:0.5:0.5 wt%

Angular Frequency [1/s]	Loss Modulus [Pa]
0.1	6.93
0.158	10.90
0.251	16.00
0.398	21.20
0.631	25.40
1	30.50
1.58	35.00
2.51	39.60
3.98	44.30
6.31	49.00
10	53.70
15.8	58.40
25.1	61.80
39.8	65.60
63.1	69.10
100	79.60

```
The Discrete Relaxation Spectrum
lamba #0 = 0.005000    eta #0 = 0.769623
lamba #1 = 0.050000    eta #1 = 4.137401
lamba #2 = 0.500000    eta #2 = 28.260609
lamba #3 = 5.000000    eta #3 = 105.349507
lamba #4 = 50.000000   eta #4 = 392.720436
Press any key to see statistical results:

Residual 0 = 91.170695
Residual 1 = 50.827434
Residual 2 = 19.410890
Residual 3 = 1.974475
Residual 4 = 0.902042
Residual 5 = 3.980668
Residual 6 = 8.371811
Residual 7 = 4.629117
Residual 8 = 3.671619
Residual 9 = 7.007231
Residual 10 = 3.011824
Residual 11 = 2.146489
Residual 12 = 3.554430
Residual 13 = 0.008793
Residual 14 = 1.098498
Residual 15 = 1.185125
SS = 118.819278
SSmean = 7324.091094
Spread = 3.286602
R^2 = 0.983777
```

SU-8 2002 Series an negative epoxy resin

PEO: Poly(ethylene oxide) 4E6 Mv

TBATFB: Tetrabutylammonium tetrafluoroborate