

SISOTOOL Primer

ME 439

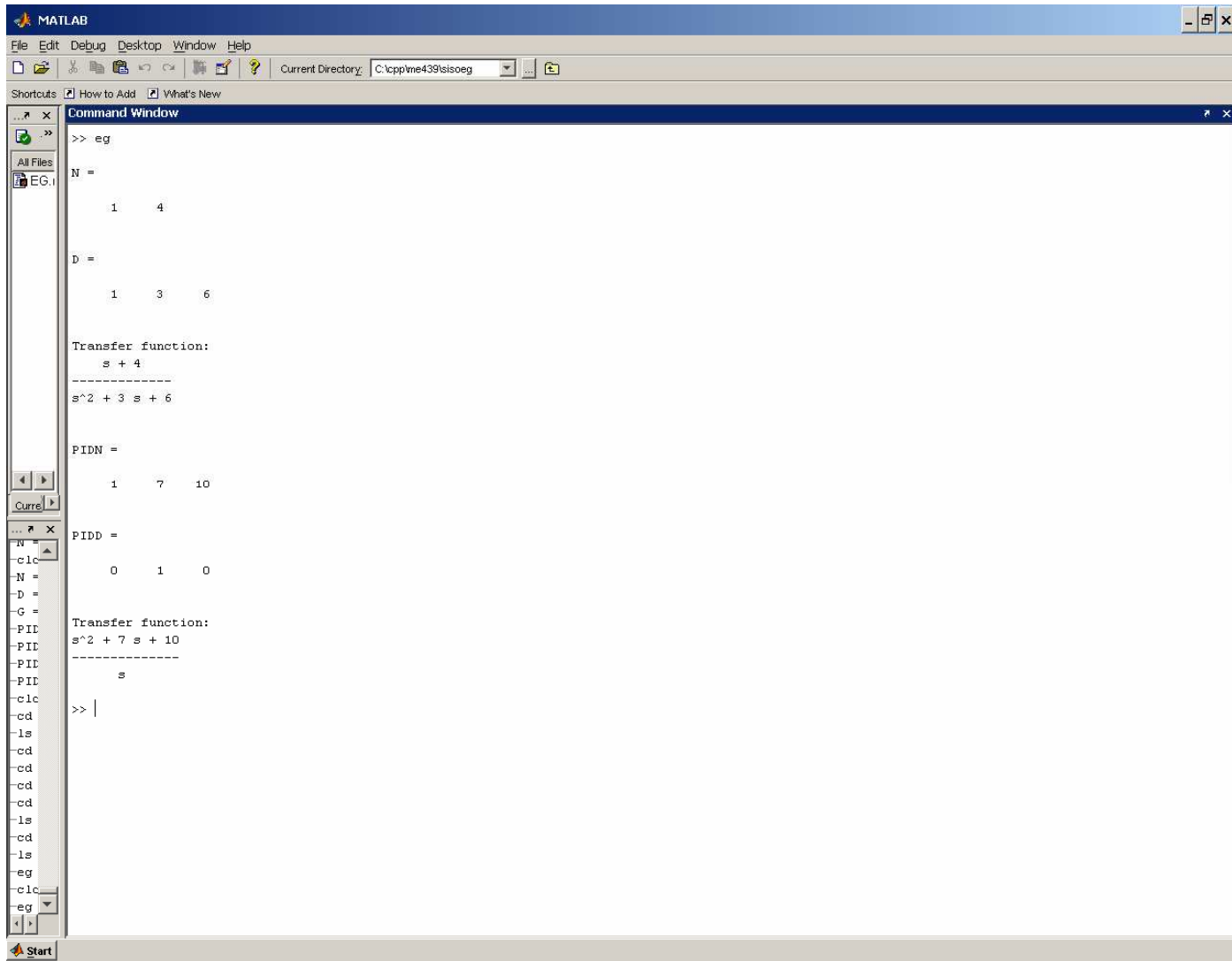
Editor - C:\CPP\ME439\SISOEG\EG.m

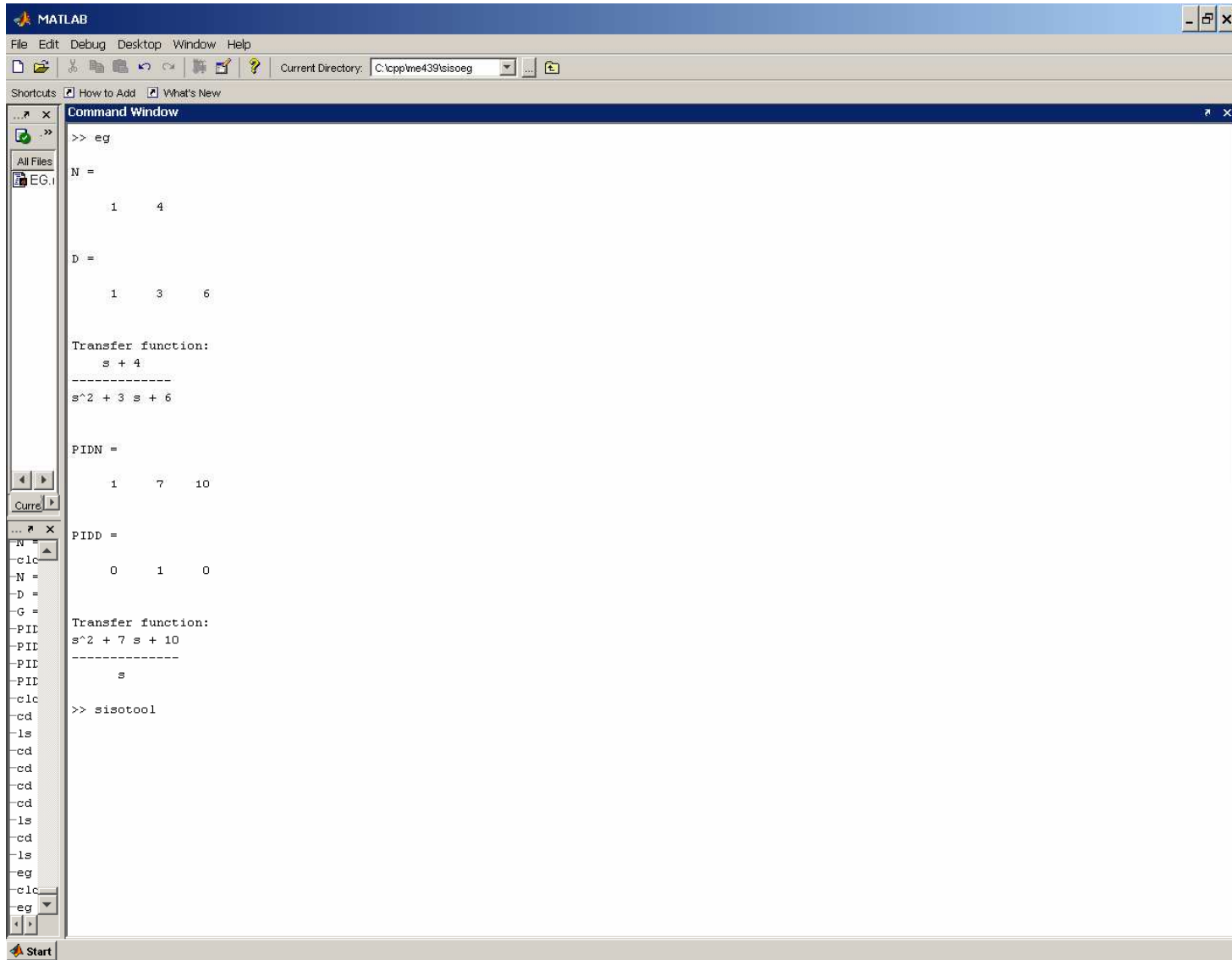
File Edit Text Cell Tools Debug Desktop Window Help

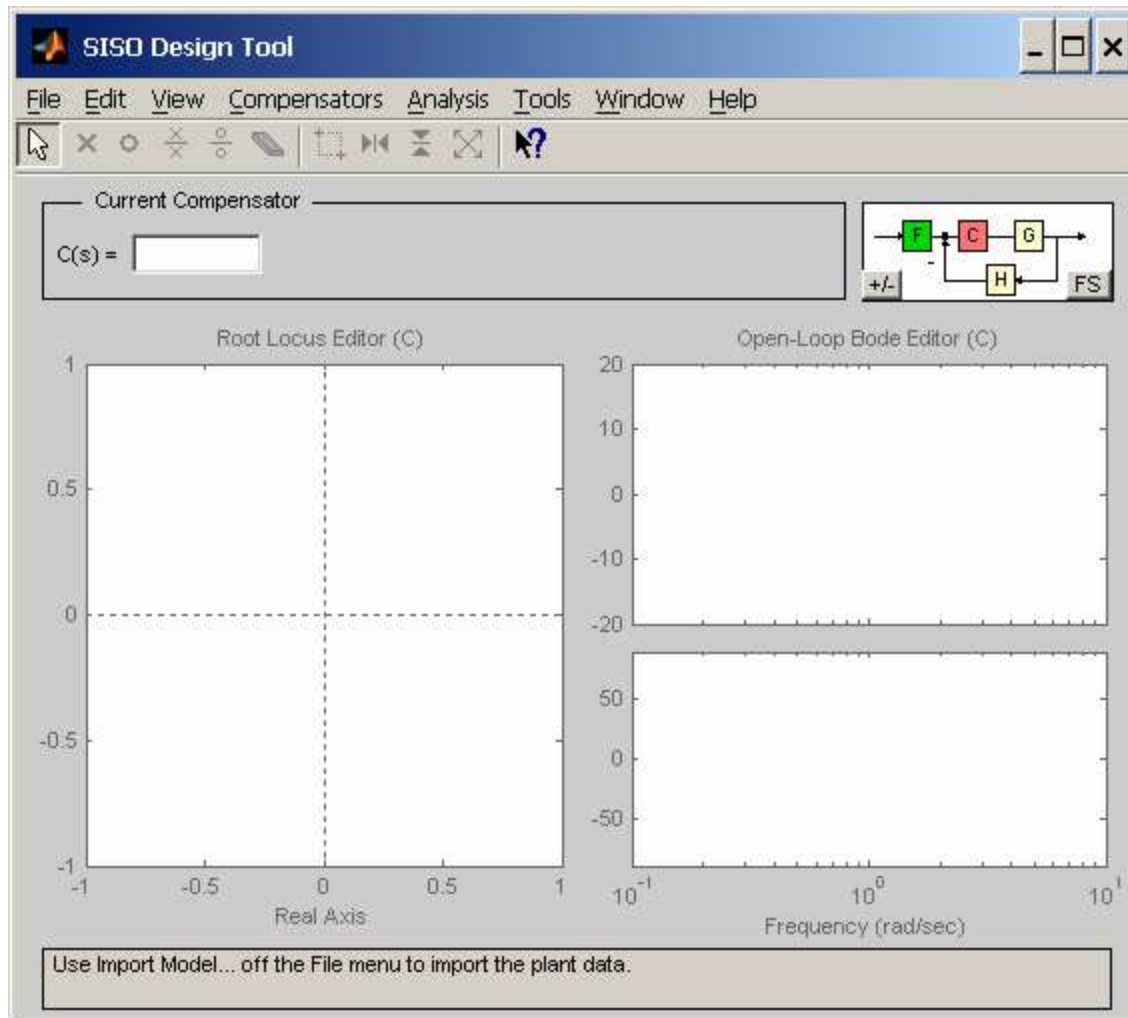
Stack: Ba...

```
1 % make a plant and PID controller LTI in MATLAB
2 - N = [1 4]
3 - D =[1 3 6]
4 - G =tf(N,D)
5 - PIDN=[1 2+5 2*5]
6 - PIDD=[0 1 0]
7 - PID=tf(PIDN,PIDD)
8
9
```

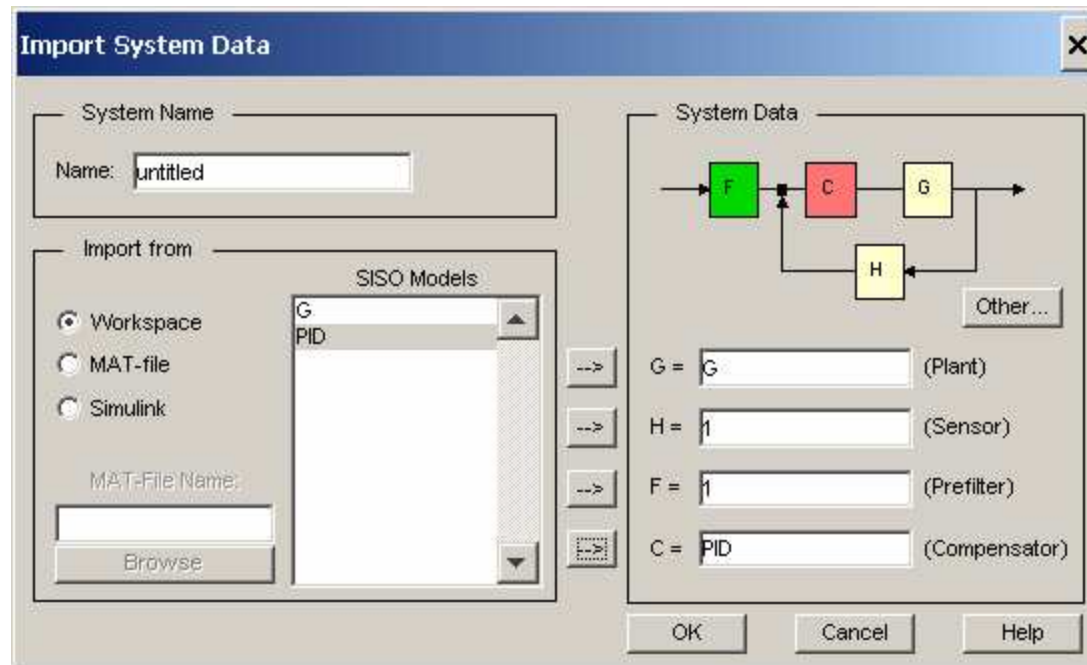
script Ln 1 Col 48 OVR





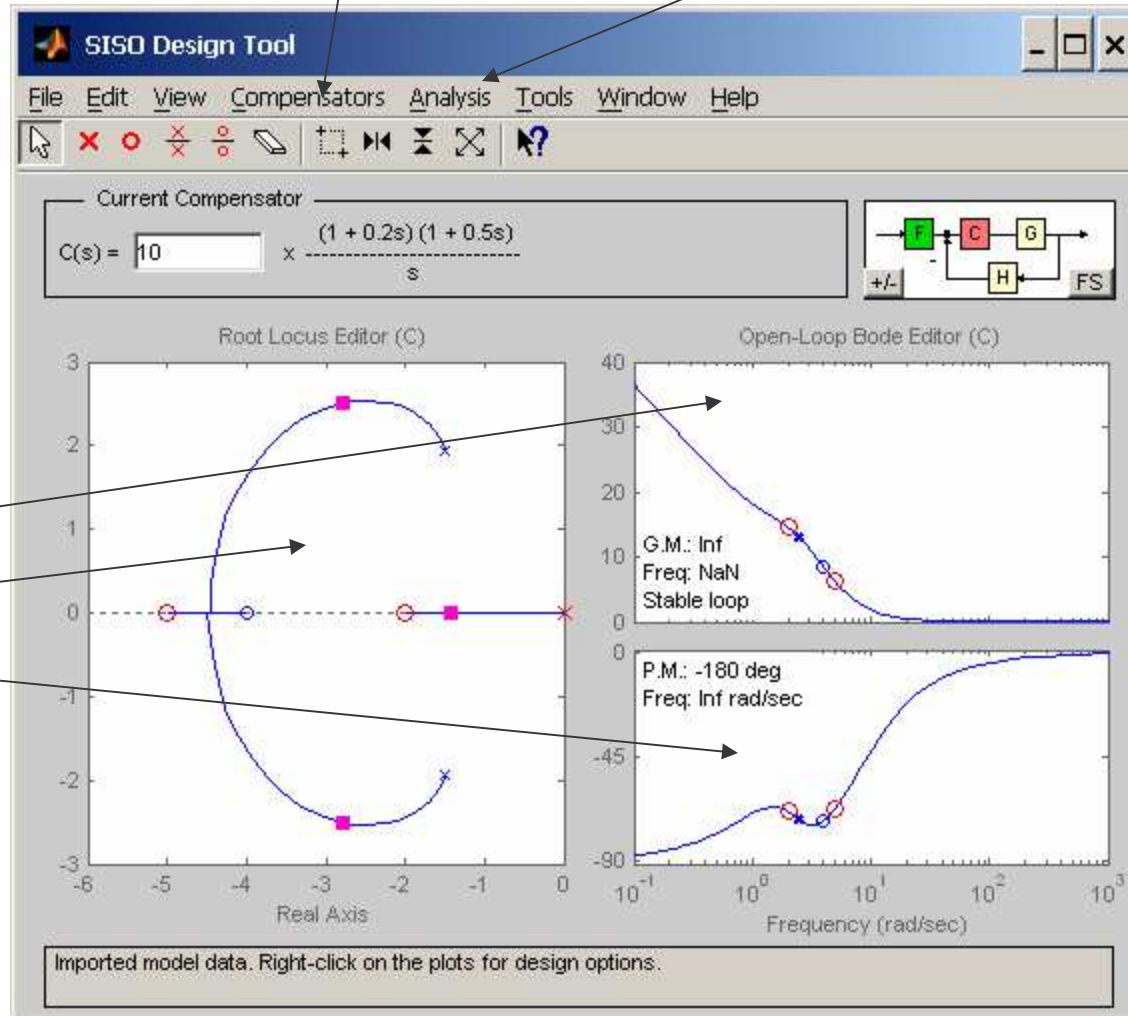


File -> Import



Compensator -> Edit

Analysis -> All kinds of Plots



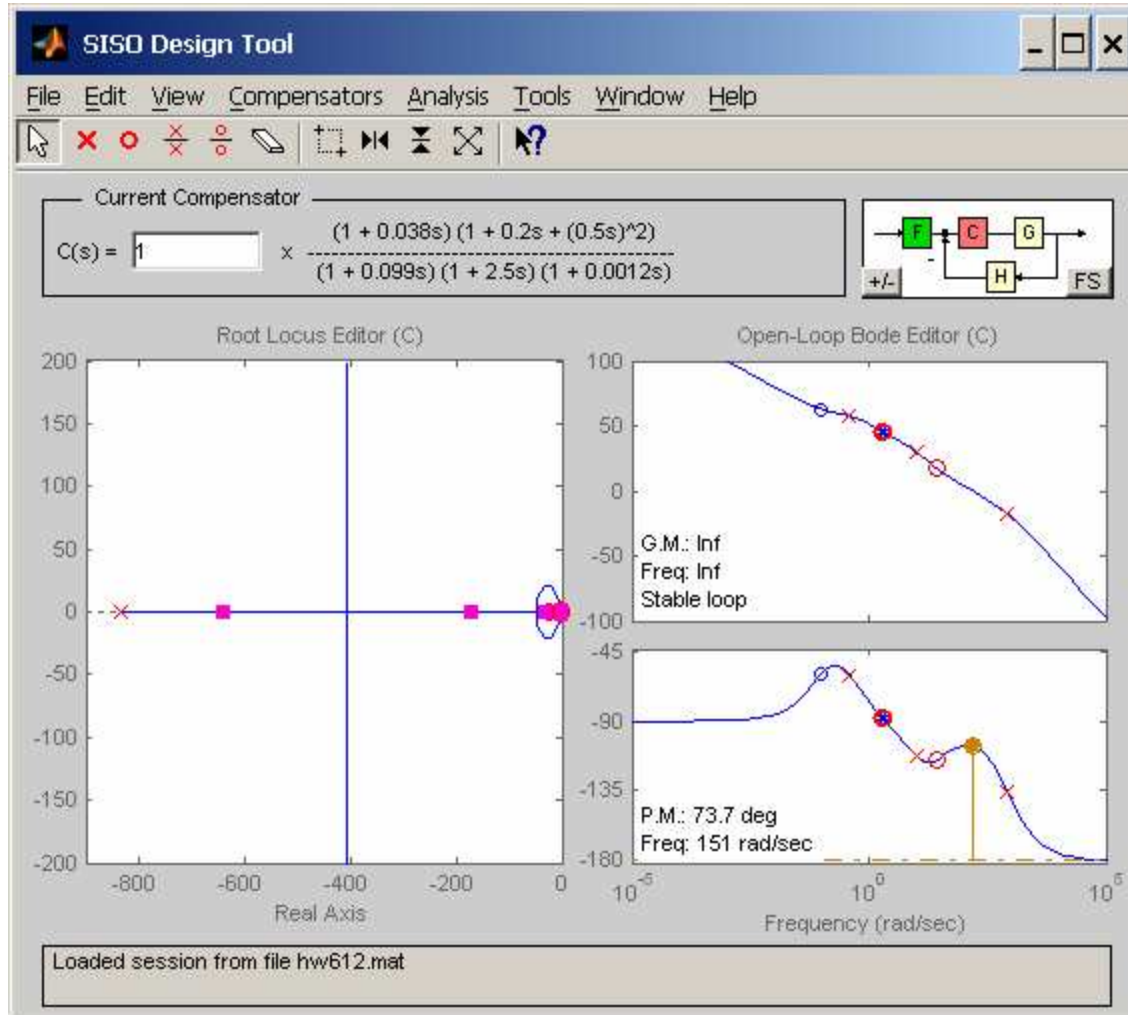
Right Click

On any plot

To apply design constraints

constraints

HW 6 Problem 12



```

MATLAB
File Edit Debug Desktop Window Help
Current Directory: C:\pp\me439\sisoeg

Command Window

1 4
D =
1 3 6

Transfer function:
s + 4
-----
s^2 + 3 s + 6

PIDN =
1 7 10

PIDD =
0 1 0

Transfer function:
s^2 + 7 s + 10
-----
s

>> sisotool
>> GH=G*PID

Transfer function:
s^3 + 11 s^2 + 38 s + 40
-----
s^3 + 3 s^2 + 6 s

>> damp(GH)

Eigenvalue      Damping      Freq. (rad/s)
-----
0.00e+000
-1.50e+000 + 1.94e+000i    6.12e-001    2.45e+000
-1.50e+000 - 1.94e+000i    6.12e-001    2.45e+000

>>

```

Damping can be determined very easily

