

Home Work #5

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1 Question 1

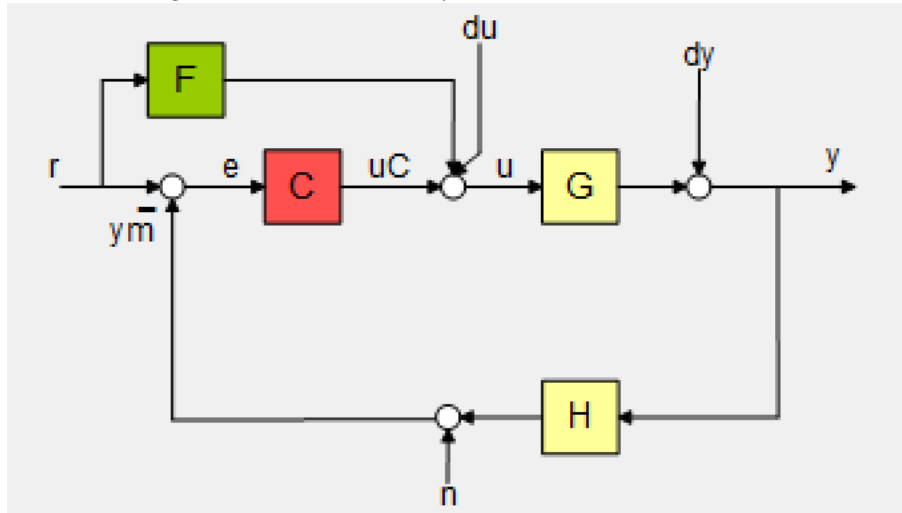
System:

$$G(s) = \frac{s+1}{s^2-2s+4}$$

System is NMP (Non Minimum Phase) because it have poles in right side and system is unstable.

Architector:

Figure 1: Architector of system in siso matlab toolbox

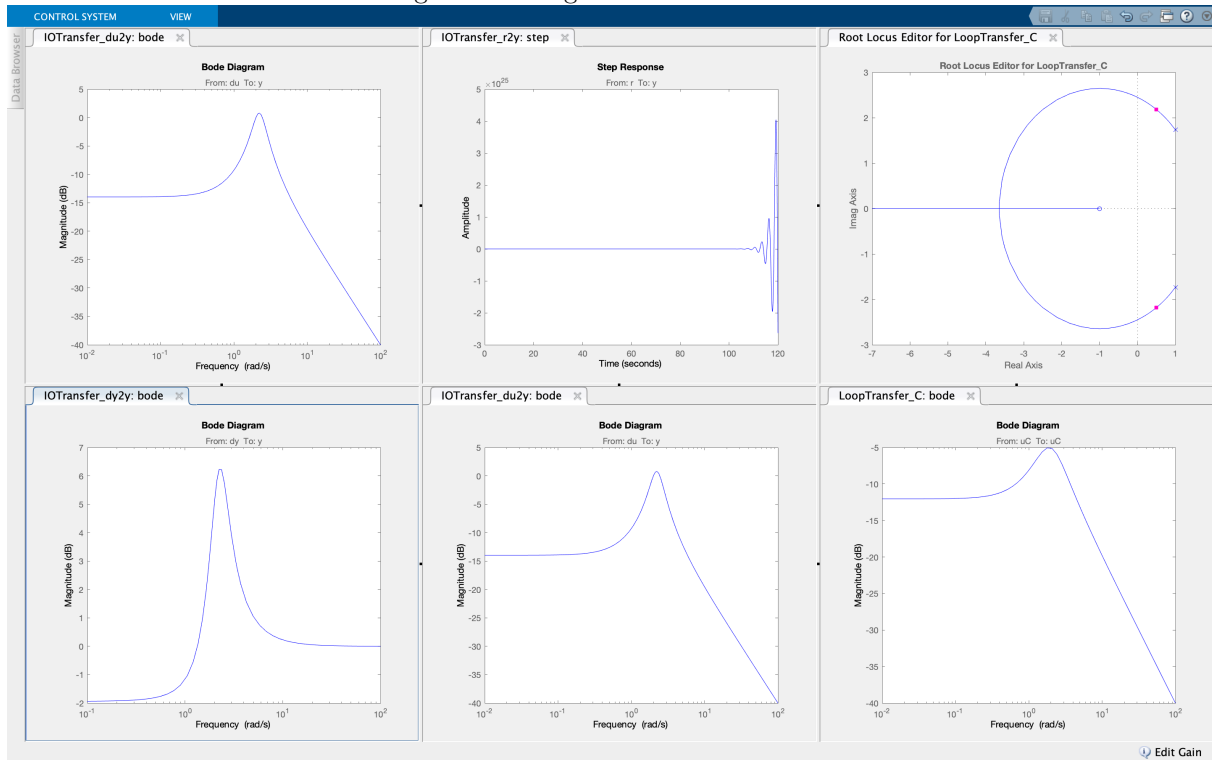


1.1 part a

In condition without controller from architector $C(s) = 1$ and $F(s) = 0$.

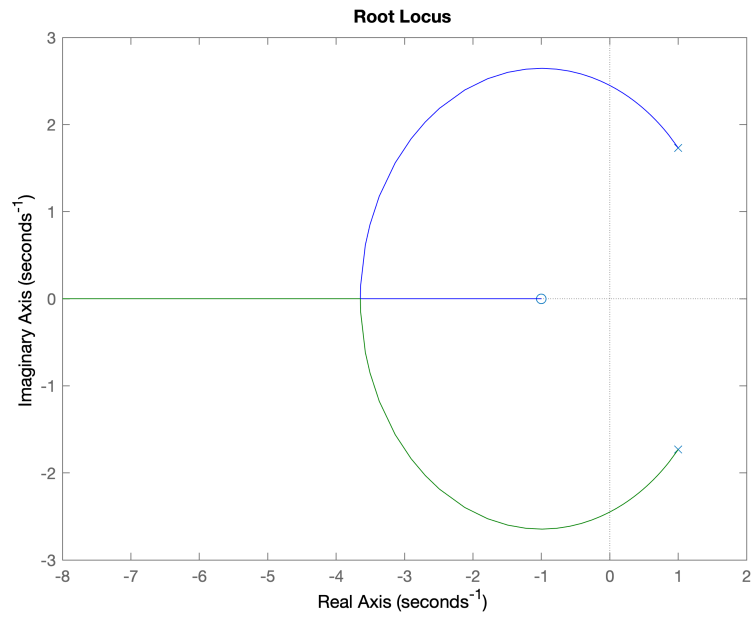
- all figures from siso toolbox

Figure 2: All figures from siso toolbox



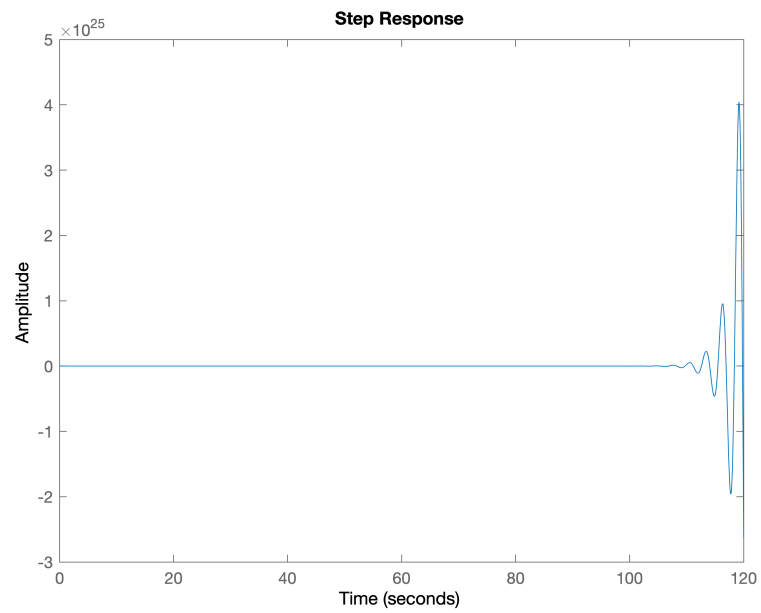
- root locus

Figure 3: root locus



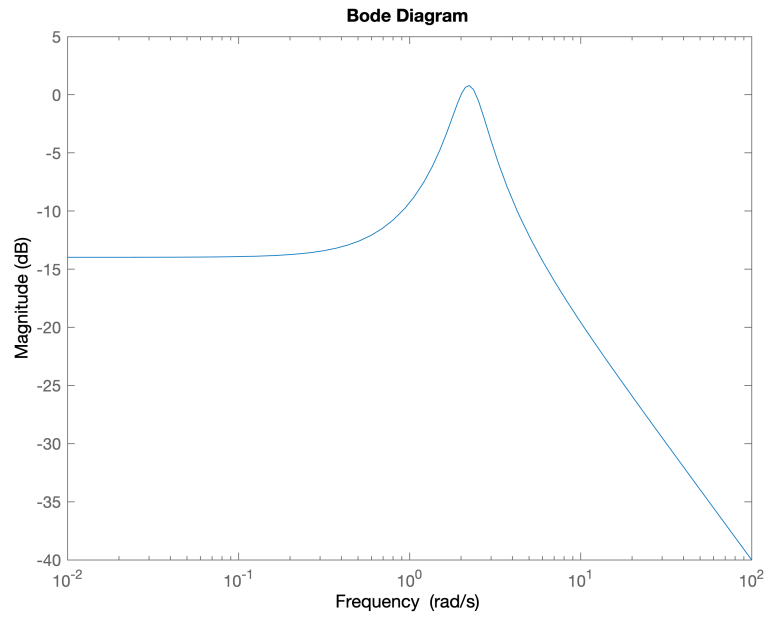
- step response for closeloop system

Figure 4: step response for closeloop system



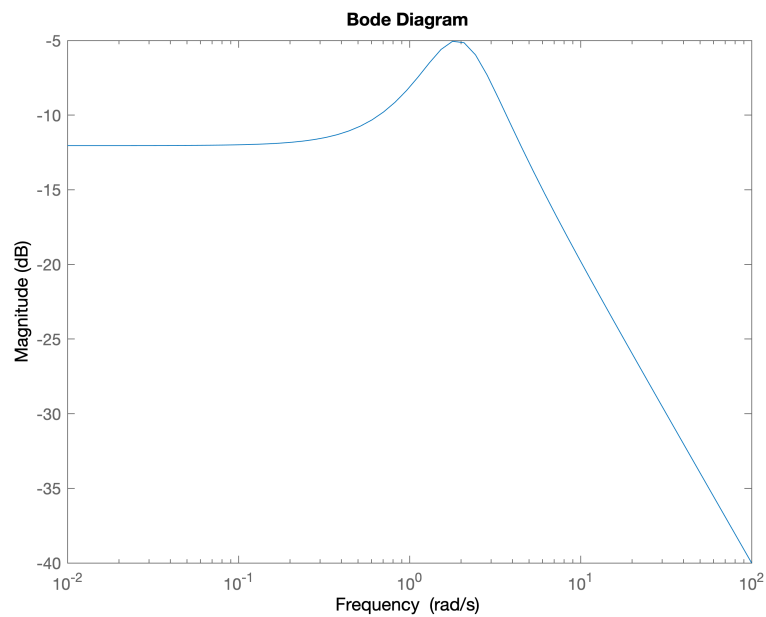
- closeloop bode (magnitude)

Figure 5: closeloop bode (magnitude)



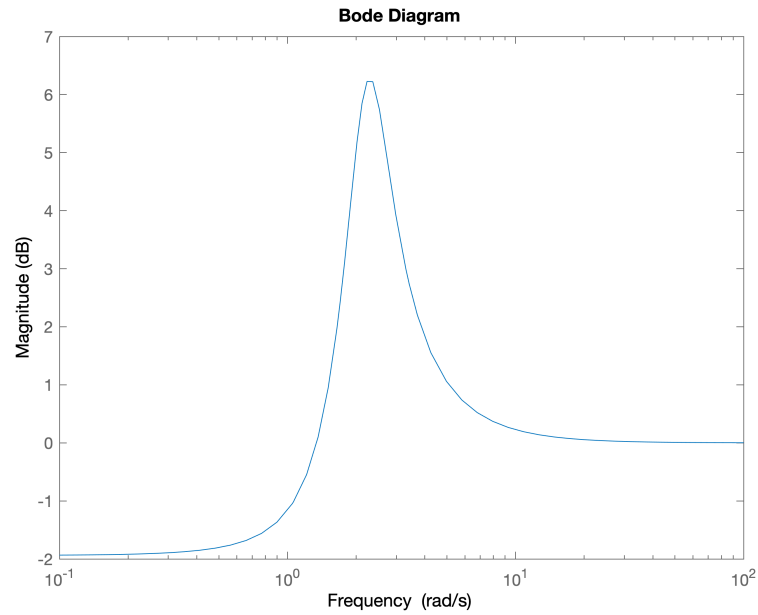
- openloop bode (magnitude)

Figure 6: openloop bode (magnitude)



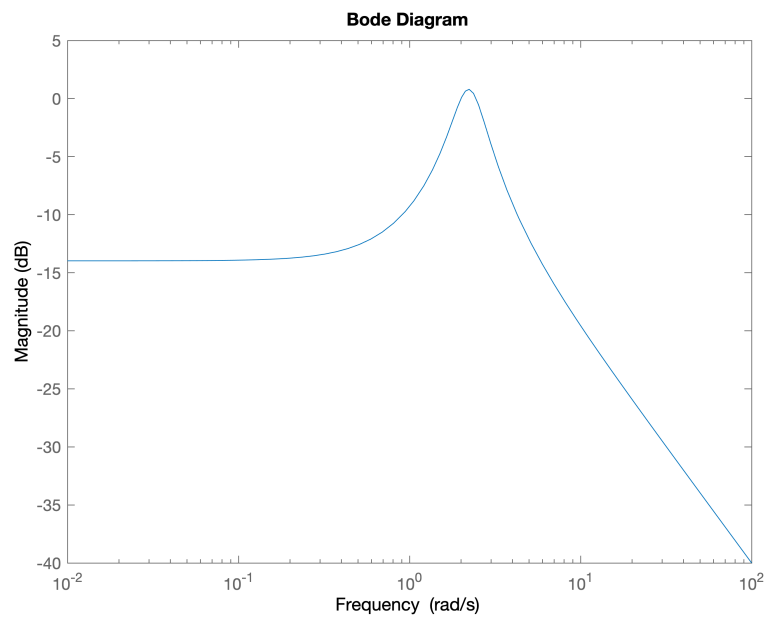
- sensitivity function

Figure 7: sensitivity function



- complementary sensitivity function

Figure 8: complementary sensitivity function



1.2 part b

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