Computer Exercise 2  
EL2520 Control Theory and Practice

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# Minimum phase case

The controller is given by

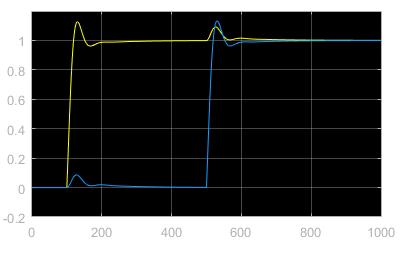
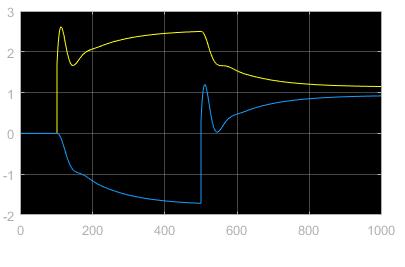


Figure 1: Simulink plots from exercise 3.2.3

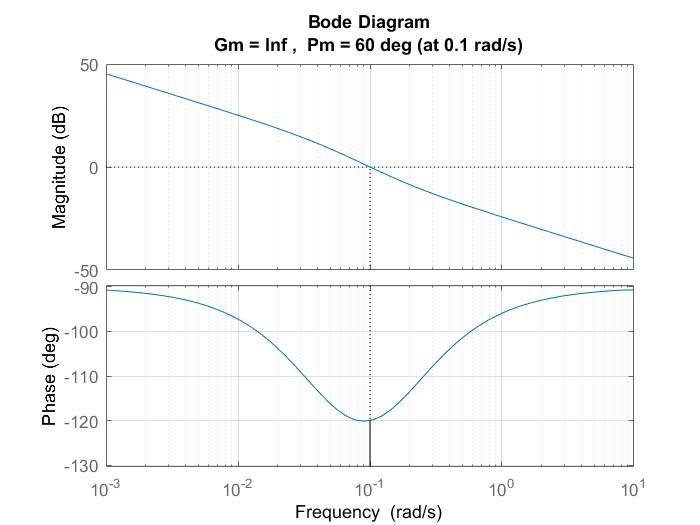
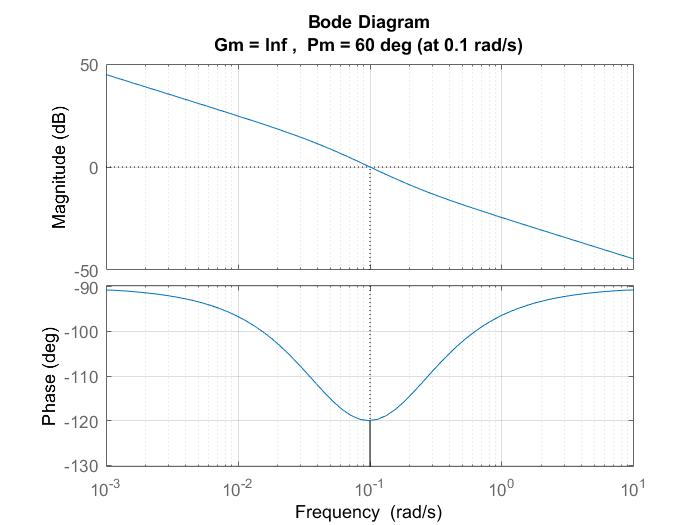


Figure : Bode diagram of the loop gain L(s) from exercise 3.2.1

Is the controller good?

The controller is good since we can see a clear step response without too big overshoot.

Are the output signals coupled?

With Simulink we can find that the output signals are coupled.

# Non-minimum phase case

The controller is given by

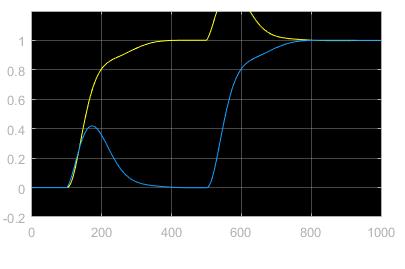
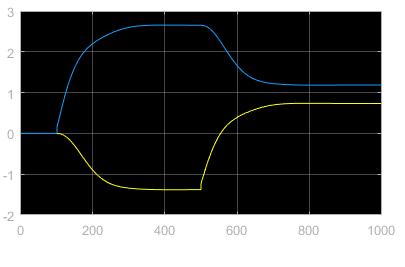


Figure : Simulink plots from exercise 3.2.3

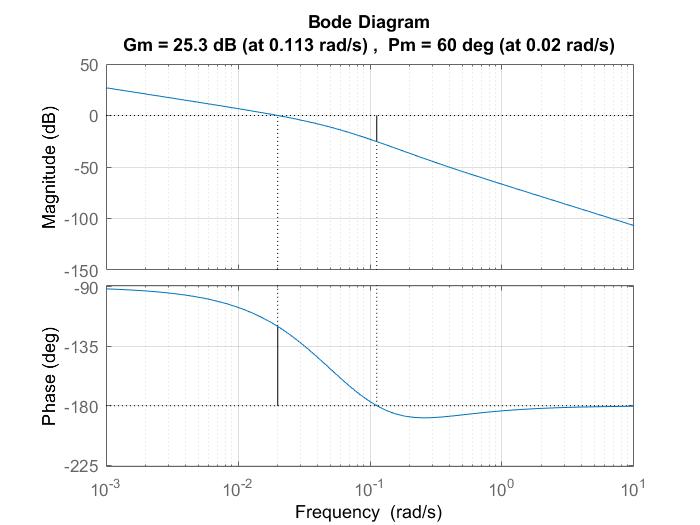
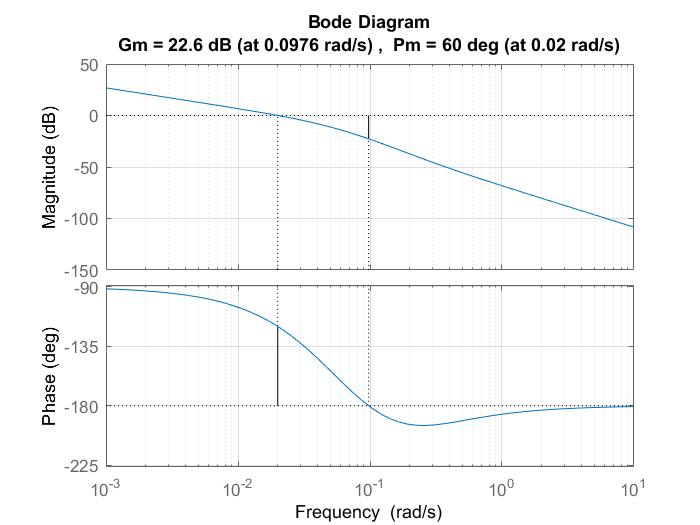


Figure : Bode diagram of the loop gain L(s) from exercise 3.2.1

Is the controller good?

The controller is not so good since it has a rather large overshoot. More than 20%.

Are the output signals coupled?

The output signals are coupled weakly because there is a dependency between yellow input and output around 600 ms and there is a dependency between blue input and output around 150 ms but no other places.