

Linear Systems Control (LSC)
TD 1

Exercise 01:

- a- Draw the asymptotic diagram of a first-order system

$$F(s) = \frac{K}{1 + \tau \cdot s}$$

- b- A linear system is characterized by the equation

$$0,5 \cdot \frac{ds}{dt} + s(t) = 15 \cdot e(t)$$

- Give the expression of the system's transfer function. What is: the order, the gain, and the time constant(s) of this system? Is it stable?
- Draw the asymptotic Bode diagram of the system.

Exercise 02:

Plot the Bode diagram for the following functions:

$$G_1(s) = K_p \quad ; \quad G_2(s) = s \quad ; \quad G_3(s) = \frac{1}{s}$$